Air Quality Permitting
Statement of Basis

June 13, 2005

Tier I Operating Permit No. T1-030520

Idaho National Laboratory Research Center (INL, Formerly INEEL)

Facility ID No. 023-00001, 011-00022

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AIR QUALITY DIVISION

FINAL

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Acronyms, Units, and Chemical Nomenclature

A1W	Large Ship Reactor
acfm	actual cubic feet per minute
AEC	Atomic Energy Commission
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
ANL-E	Argonne National Laboratory – East
ANL-W	Argonne National Laboratory – West
ANSI	American National Standards Institute
AP-42	Compilation of Air Pollutant Emissions Factors, Volume I: Stationary Point and Area Sources
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
ATR	Advanced Test Reactor
BBWI	Bechtel BWXT Idaho, LLC
BNFL	British Nuclear Fuels, Inc.
Btu	British Thermal Unit
CAA	Clean Air Act
CFA	Central Facilities Area
CEMS	continuous emissions monitoring system
CFR	Code of Federal Regulations
Ci	Curie
Ci/mo	Curies per month
Ci/yr	Curie Per Year
cm	centimeter
cm^2	square centimeter
CO	carbon monoxide
CPP	Chemical Processing Plant (now known as INTEC)
CTF	Contained Test Facility (formerly LOFT)
DEQ	Idaho Department of Environmental Quality
DOE	United States of America Department of Energy
DOE-ID	DOE Idaho Operations Office
dpm	disintegrations per minute
dscf	dry standard cubic feet
DU	depleted uranium
DWHE	Drummed Waste Handling Enclosure
DWPG	Drummed Waste Processing Glovebox
EBR-I	Experimental Breeder Reactor-I
EBR-II	Experimental Breeder Reactor-II
ECF	Expended Core Facility
EF	emissions factor

EPA	United States Environmental Protection Agency
ERM	effluent radiation monitor
et seq.	and the following one(s)
ETR	Engineering Test Reactor
FAA	Federal Aviation Administration
FAST	Fluorinel Dissolution Process and Fuel Storage Facility
FCF	Fuel conditioning Facility
FGR	flue gas recirculator
FSA	Fuel Storage Area
gal	gallon
gal/day	gallons/day
gal/hr	gallons/hour
gal/month	gallons/month
gal/yr	gallons/year
gpm	gallons per minute
gr	grain (1 lb = 7,000 grains)
HAPs	hazardous air pollutants
HCRW	hazardous chemical and radioactive waste
HEPA	high efficiency particulate air
HFEF	Hot Fuel Examination Facility (located at ANL-W)
hp	horsepower
hr	hour
hrs	hours
ICPP	Idaho Chemical Processing Plant (now known as INTEC)
IDAPA	Idaho Administrative Procedures Act
INEEL	Idaho National Engineering and Environmental Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
JP-4	Jet Propulsion 4
JP-8	Jet Propulsion 8
km	kilometer
lb	pound
lb/hr	pound Per Hour
lbs	pounds
LET&D	Liquid Effluent Treatment and Disposal Facility
LLW	low-level Radioactive Waste
LOFT	Loss-of-fluid Test
MACT	Maximum Achievable Control Technology
MDAS	Multi-Detector Analysis System
MMBtu	million British thermal units
mrem	millirem (one thousandth of a roentgen equivalent man)
mrem/yr	millirem per year
MTR	Materials Test Reactor
MWSF	Mixed Waste Storage Facility

NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NO_x	oxides of nitrogen
NRC	Nuclear Regulatory Commission
NRF	Naval Reactors Facility
NSPS	New Source Performance Standards
NWCF	New Waste Calcining Facility
O&M	operating and maintenance
OSHA	Occupational Safety and Health Administration
O_3	ozone
PAPS	Process Atmospheric Protection System
Pb	lead
PBF	Power Burst Facility
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POTW	publicly owned treatment works
PRF	Process Reclamation Facility
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
PW	process weight
QAPP	quality assurance project plan
RCRA	Resource Conservation and Recovery Act
RWMC	Radioactive Waste Management Complex
S1W	Submarine Thermal Reactor
S5G	Natural Circulation Reactor
SDA	Subsurface Disposal Area
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SMC	Specific Manufacturing Capability Facility
SO_2	sulfur dioxide
SPERT	Special Power Excursion Reactor Tests
SPF	Sodium Processing Facility
T	ton
T/yr	tons per year
TAN	Test Area North
TMI	Three Mile Island
TMI-2	Three Mile Island Unit 2
TRA	Test Reactor Area
TREAT	Transient Reactor Test Facility
TRIGA	Training, Research, Isotope, General Atomics
TRU	transuranic
TSA-RE	Transuranic Storage Area Retrieval Enclosure

TSP	total suspended particulates
U.S.C.	United States Code
UTM	Universal Transverse Mercator
VAPS	Ventilation Atmospheric Protection System
VOC	volatile organic compound
VOG	vessel off gas
WCA	Waste Characterization Area
WERF	Waste Experimental Reduction Facility
WIPP	Waste Isolation Pilot Plant
WROC	Waste Reduction Operations Complex
WRRTF	Water Reactor Research Test Facility
WWTF	Warm Waste Treatment Facilities
yr	year
ZPPR	Zero Power Physics Reactor
%	percent

Public Comment / Affected States / EPA Review Summary

A public comment period for the INL draft Tier I Operating Permit was held in accordance with IDAPA 58.01.01.364 (*Rules for the Control of Air Pollution in Idaho*) between August 19, 2004 and September 29, 2004. A public hearing was held in Idaho Falls on September 28, 2004

IDAPA 58.01.01.008.01, defines *affected states* as: "*All states: whose air quality may be affected by the emissions of the Tier I source and that are contiguous to Idaho; or that are within fifty (50) miles of the Tier I source.*"

A review of the site location information included in the permit application indicates that the facility is located within 50 miles of Montana state border and the Fort Hall Indian Reservation, which meets the definition of an affected state per 40 CFR 71.2. Therefore, the state of Montana and the Fort Hall Indian Reservation were provided an opportunity to comment on the draft Tier I Operating Permit. In addition, DEQ provided the same opportunity to the state of Wyoming as a courtesy.

Summary of Comments

No comments were received from any affected state.

During the public comment period comments were received from INL, no other entity provided comments.

The INL was the only entity that provided comments during the September 28, 2004 hearing.

Responses to comments are provided in Appendix B of this memorandum.

After the public comment period and public hearing, EPA was sent the proposed operating permit and the statement of basis for their 45-day review period. EPA did not provide comments on the permit.

On June 8, 2005 the INL provided comments on the proposed permit that was sent to EPA for their review. The following administrative permit changes have been made based on these comments:

- The names of the responsible officials have changed.
- Section 11.1 of the proposed permit has been changed to correct an error in quoting an underlying permit condition. Section 11.1 is now an exact quote of the underlying applicable requirement.
- General Provision 21 has been changed to specify the period of operations that annual compliance certifications must cover and changed to add a specific date by which compliance certification must be submitted.
- General Provision 24 has been changed to add specific dates by which semiannual monitoring reports must be submitted.

1. PURPOSE

The purpose of this memorandum is to describe the legal and factual basis for this final Title V Operating Permit in accordance with IDAPA 58.01.01.362

Idaho's Tier I permitting program allows the state to implement the federal Title V permit program. According to 40 CFR 70, the Title V program is *"...meant to accomplish the largely procedural task of identifying and recording existing substantive requirements applicable to regulated sources and to assure compliance with these existing requirements..."*.

On July 10, 1995, the EPA published guidance on the Title V permitting process. This guidance includes the following description of the Title V permitting program: *"Title V of the CAA and its implementing regulations in Part 70 set forth minimum requirements for State operating permit programs. In general, this program was not intended by Congress to be the source of new substantive requirements. Rather, operating permits required by Title V are meant to accomplish the largely procedural task of identifying and recording existing substantive requirements applicable to regulated sources and to assure compliance with these existing requirements. Accordingly, operating permits and their accompanying applications should be vehicles for defining existing compliance obligations rather than for imposing new requirements or accomplishing other objectives."*

The state of Idaho has promulgated regulations in the *Rules* for Tier I Operating Permits. The state's Tier I Operating Permit requirements have been approved by the EPA and allow Idaho to implement the federal Title V permit program through its Tier I Operating Permit program.

DEQ staff have reviewed the information provided by DOE regarding the operation of the INL located west of Idaho Falls. This information was submitted based on the requirements to submit a Tier I Operating Permit in accordance with IDAPA 58.01.01.300.

2. SUMMARY OF EVENTS

On July 31, 1995, DEQ received the initial Tier I Operating Permit application from DOE for the INEEL near Idaho Falls, Idaho.

On April 6, 2001, DEQ received the Tier I Operating Permit application update from DOE for the INEEL.

On February 3, 2003, DEQ received an addendum to the INEEL Tier I Operating Permit application addressing Hazardous Air Pollutants.

On February 3, 2003, DEQ received a copy of a letter from EPA Headquarters to Mr. Chuck Broscious, summarizing EPA's review of MACT applicability at the INEEL.

On June 30, 2004, DEQ issued a facility draft Tier I permit and statement of basis to the DOE for review.

On July 14, 2004, DEQ received comments from DOE on the facility draft Tier I permit and statement of basis.

A public comment period was held between August 19, 2004 and September 29, 2004.

On September 28, 2004 a public hearing was held in Idaho Falls.

On April 1, 2005 EPA was sent a proposed permit for their 45 day review.

On May 16, 2005 EPA notified DEQ in writing that they were not providing comments on the proposed permit and did not object to the permit's issuance.

On June 8, 2005 the INL requested administrative changes to the proposed permit. All of these requested changes were made. The changes are discussed in the Public Comment / Affected States / EPA Review Summary protion of this statement of basis.

3. BASIS OF THE ANALYSIS

The following documents were relied upon in preparing this memorandum and the Tier I Operating Permit:

- Tier I Operating Permit application, received July 31, 1995; and supplemental application materials received on April 6, 2001 and February 3, 2003.
- *Compilation of Air Pollutant Emission Factors*, AP-42, Office of Air Quality Planning and Standards, EPA.

4. FACILITY DESCRIPTION

4.1 General Site Description

The INL consists of the nine distinct operational areas within an 890-square-mile area owned by the U.S. Government in southeastern Idaho. The operational areas include the following:

Test Area North (TAN)

Test Reactor Area (TRA)

Idaho Nuclear Technology and Engineering Center (INTEC)

Central Facilities Area (CFA)

Waste Reduction Operations Complex/Power Burst Facility (WROC/PBF)

Radioactive Waste Management Complex (RWMC)

Advanced Mixed Waste Treatment Project (AMWTP)

Naval Reactors Facility (NRF)

Argonne National Laboratory West (ANL-W)

4.2 Facility / Area Classification

The INL facility is classified as major, in accordance with IDAPA 58.01.01.008.10, for Tier I permitting purposes because the facility has the potential to emit (PTE) 100 T/yr of regulated air pollutants, specifically NO_x, SO_2, and PM. The INL certified that its facility is major for HAPs with emissions less than 25 T/yr of cumulative HAPs and greater than 10 T/yr for a single HAP. The facility is a multipurpose national laboratory and has a SIC of 9511and 8733. The facility has an AIRS classification code of A.

The INL facility is located within AQCR 061, UTM Zone 12, which is located in Bonneville, Butte, Bingham, Clark, and Jefferson counties, all of which are classified as attainment or unclassified areas for all federal and state criteria pollutants (i.e., SO_2, NO_X, CO, PM_{10}, O_3, and Pb). There are no Class I areas within 10 km of the INL facility boundary. The nearest Class I area is Craters of the Moon National Monument.

5. REGULATORY ANALYSIS - FACILITY-WIDE APPLICABLE REQUIREMENTS

5.1 Fugitive Dust [IDAPA 58.01.01.650-651]

5.1.1 Requirement

Permit Condition 2.1 states that all reasonable precautions shall be taken to prevent PM from becoming airborne in accordance with IDAPA 58.01.01.650-651.

5.1.2 Compliance Assurance

Permit Condition 2.2 states that the permittee is required to monitor and maintain records of the frequency and the methods used by the facility to reasonably control fugitive particulate emissions. IDAPA 58.01.01.651 gives some examples of ways to reasonably control fugitive emissions (e.g., using water or chemicals, applying dust suppressants, using control equipment, covering trucks, paving roads or parking areas, and removing materials from streets).

Permit Condition 2.3 requires that the permittee maintain a record of all fugitive dust complaints received. In addition, the permittee is required to take appropriate corrective action as expeditiously as practicable after a valid complaint is received. The permittee is also required to maintain records that include the date that each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

To ensure that the methods being used by the permittee to reasonably control fugitive PM emissions whether or not a complaint is received, Permit Condition 2.4 requires that the permittee conduct periodic inspections of the facility. The permittee is required to inspect potential sources of fugitive emissions during daylight hours and under normal operating conditions. If the permittee determines that the fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee is also required to maintain records of the results of each fugitive emissions inspection.

Both Permit Conditions 2.3 and 2.4 require the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid complaint or determining that fugitive particulate emissions are not being reasonably controlled meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

5.2 Visible Emissions [IDAPA 58.01.01.625]

5.2.1 Requirement

IDAPA 58.01.01.625 and Permit Condition 2.5 say that no person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than 20% opacity as determined by IDAPA 58.01.01.625. This provision does not apply when the presence of uncombined water, NO_x, and/or chlorine gas is the only reason for the failure of the emissions to comply with the requirements of this rule.

5.2.2 Compliance Assurance

To ensure reasonable compliance with the visible emissions rule, Permit Condition 2.6 requires that the permittee conduct routine visible emissions inspections at the facility. The permittee is required to inspect potential sources of visible emissions during daylight hours and under normal operating conditions. The visible emissions inspection consists of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emissions covered by this section, the permittee must either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is determined to be greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee must take corrective action and report the exceedance in its annual compliance certification and in accordance with the excess emissions rules in IDAPA 58.01.01.130-136. The permittee is also required to maintain records of the results of each visible emissions inspection and each opacity test when conducted. These records must include the date of each inspection, a description of the permittee's assessment of the conditions existing at the time visible emissions are present, any corrective action taken in response to the visible emissions, and the date corrective action was taken.

It should be noted that if a specific emissions unit has a specific compliance assurance method for visible emissions that differs from Permit Condition 2.6, then the specific compliance assurance method overrides the requirement of Permit Condition 2.6. Permit Condition 2.6 is intended for small sources that would generally not have any visible emissions.

Permit Condition 2.6 requires the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of discovering visible emissions meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or delayed action may be necessary.

5.3 *Excess Emissions [IDAPA 58.01.01.130-136]*

5.3.1 Requirement

Permit Condition 2.7 requires that the permittee comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upset, and breakdowns. This section is fairly self-explanatory and no additional detail is necessary in this technical analysis. It should, however, be noted that subsections 133.02, 133.03, 134.04, and 134.05 are not specifically included in the permit as applicable requirements. These provisions of the *Rules* only apply if the permittee anticipates requesting consideration under subsection 131.02 of the *Rules* to allow DEQ to determine if an enforcement action to impose penalties is warranted. Section 131.01 states: "The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05." Failure to prepare or file procedures pursuant to Sections 133.02 and 134.04 is not a violation of the *Rules* in and of itself, as stated in subsections 133.03.a and 134.06.b. Therefore, since the permittee has the option to follow the procedures in Subsections 133.02, 133.03, 134.04, and 134.05; and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

5.3.2 Compliance Assurance

The compliance assurance is contained within the text of Permit Condition 2.7.

5.4 *Open Burning [IDAPA 58.01.01.600-616]*

Refer to Permit Condition 2.8 and IDAPA 58.01.01.600-616.

5.5 *Fuel-Burning Equipment [IDAPA 58.01.01.677]*

5.5.1 Requirement

Refer to Permit Condition 2.9 and IDAPA 58.01.01.677.

5.5.2 Compliance Assurance

The INL facility utilizes numerous boilers. The permittee certified in the application that the boilers combust No. 1 fuel oil, No. 2 fuel oil, No. 4 fuel oil, JP-4 fuel, and/or JP-8 fuel. Appendix A of this memorandum contains calculations that assure compliance with the grain-loading standard, using AP-42 emissions factors for fuel oil combustion. Emissions factors given in AP-42 are generally accepted as conservative estimates. Even a conservative estimate of emissions from fuel oil combustion results in an approximate grain loading well below the standard of 0.050 gr/dscf. Therefore, compliance with the grain-loading standard is assured.

There are no emissions factors for JP-4 and JP-8 fuel in AP-42. However, JP-4 and JP-8 are derivatives of No. 1 fuel oil (kerosene). Therefore, it is expected that emissions from combustion of these fuels will be of the same magnitude or less than combustion of No. 2 fuel oil. Therefore, compliance with the grain-loading standard is assured.

5.5.3 Monitoring and Recordkeeping

The permittee shall maintain records of the fuel-type combusted in the boilers in accordance with Permit Condition 2.9.1 and 2.22 (Facility-wide Monitoring and Recordkeeping).

5.6 *Sulfur Content [IDAPA 58.01.01.728]*

5.6.1 Requirement

Refer to Permit Condition 2.10 and IDAPA 58.01.01.728.

5.6.2 Compliance Assurance

Compliance with this permit condition shall be demonstrated by maintaining records from the fuel oil supplier in accordance with Permit Condition 2.10 and 2.22 (Facility-wide Monitoring and Recordkeeping) of the Tier I Operating Permit.

5.7 *Particulate Matter - Process Weight Limitations [IDAPA 58.01.01.700-703]*

5.7.1. Requirement

Permit Condition 2.11 states: "No person shall emit to the atmosphere from any process or process equipment operating prior to October 1, 1979, PM in excess of the amount shown by the following equations, where E is the allowable emissions from the entire source in pounds per hour, and PW is the process weight in pounds per hour:

a. If PW is less than 17,000 lbs/hr,
$E = 0.045(PW)^{0.60}$

b. If PW is equal to or greater than 17,000 lbs/hr,
$E = 1.12(PW)^{0.27}$

No person shall emit to the atmosphere from any process or process equipment operating on or after October 1, 1979, PM in excess of the amount shown by the following equations, where E is the allowable emissions from the entire source in pounds per hour, and PW is the process weight in pounds per hour:

a. If PW is less than 9,250 lbs/hr,
$E = 0.045(PW)^{0.60}$

b. If PW is equal to or greater than 9,250 lbs/hr,
$E = 1.10(PW)^{0.25}$ "

The condition states the PW limitations for existing and new equipment.

5.7.2 Compliance Assurance

If the permittee chooses to assure compliance through testing, the appropriate test methods for PM process weight rate shall be in accordance with IDAPA 58.01.01.157. The permittee may also choose to assure compliance through calculations using AP-42 or other DEQ-approved emissions factors and a maximum process throughput. Recordkeeping and monitoring information for process weight rate shall be kept in accordance with Facility-wide Condition 2.22.

5.8 *Performance Testing [IDAPA 58.01.01.158]*

Permit Condition 2.12 outlines the general procedures for stack emissions testing.

5.9 *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

5.9.1 Applicability

Permit Condition 2.13 states: "The permittee shall operate all affected boilers at the facility in accordance with 40 CFR Part 60 Subpart Dc. For the purposes of this section of the operating permit and in accordance with 40 CFR 60.40c, an affected boiler is defined as any boiler with a maximum design heat capacity greater than or equal to 10 MMBtu/hr and less than or equal to 100 MMBtu/hr, which was constructed, modified, or reconstructed after June 9, 1989."

The condition defines the NSPS applicability criteria.

5.9.2 Requirements

Permit Condition 2.13.1 states: "The permittee shall comply with the sulfur dioxide standards in accordance with 40 CFR 60.42c(d). The sulfur limits apply at all times, including periods of startup, shutdown, and malfunction."

This condition paraphrases the requirements of 40 CFR 60.42c that establish standards for SO_2 for boilers affected by Subpart Dc. The permittee has certified in the permit application that boilers at the facility combust oil and/or propane. Therefore, the SO_2 standards listed in 40 CFR 60.42c(d) and (i) apply to affected boilers at the facility.

Permit Condition 2.13.2 states: "When combusting oil in an affected boiler that has a heat input capacity of greater than or equal to 30 MMBtu/hr, opacity shall not exceed 20% (six-minute average), except for one six-minute period per hour of not more than 27% opacity. The opacity standard applies at all times, except during periods of startup, shutdown, or malfunction."

This condition paraphrases the requirements of 40 CFR 60.43c that establish standards for PM for boilers with a heat input capacity greater than or equal to 30 MMBtu/hr and is affected by Subpart Dc. As previously stated, the permittee has certified that the boilers combust oil at the facility; therefore, the opacity standards in 40 CFR 60.43c(c) and (d) apply to affected boilers at the facility

5.9.3 Compliance Assurance

Permit Condition 2.13.3 states: "The permittee shall maintain documentation supporting 40 CFR Part 60 Subpart Dc applicability determinations for each boiler at the facility. The documentation shall include, but is not limited to: date boiler was constructed; date boiler was modified or reconstructed as defined in 40 CFR 60.14 and 60.15; maximum design heat input capacity of the boiler; results of performance tests; and fuel burned."

The permittee is required to maintain NSPS applicability documentation to determine whether 40 CFR 60 Subpart Dc applies to each boiler at the facility. Potentially affected boilers as determined by the permit application are listed in the area-specific portions of this technical memorandum.

Permit Condition 2.13.4 states: "The permittee shall obtain certifications from the fuel supplier that the oil complies with specifications of the distillate oil definition in 40 CFR 60.41c. The most recent five-year collection of data shall be kept onsite and shall be made available to DEQ representatives upon request."

In accordance with 40 CFR 60.42c(h)(1), boilers that are distillate-oil fired with heat capacities between 10 and 100 MMBtu/hr can assure compliance with the SO_2 standards of Subpart Dc through certifications from fuel suppliers in accordance with 40 CFR 60.48c(f)(1). Permit Condition 2.13.4 is a paraphrase of 40 CFR 60.48c(f)(1).

Permit Condition 2.13.5 states: "Compliance with PM and opacity standards under 40 CFR 60.43c shall be determined in accordance with 40 CFR 60.45c and as required in 40 CFR 60.8, General Provision I, and IDAPA 58.01.01.157."

This condition indicates the permittee must assure compliance with the opacity standard of Permit Condition 2.13.2 in accordance with 40 CFR 60.45c(a) or (b).

Permit Conditions 2.13.6 and 2.13.7 state: "The permittee shall record and maintain records of the amounts of each fuel combusted during each day. The most recent five-year collection of data shall be kept onsite and shall be made available to department representatives upon request.

For all affected boilers at the facility, the permittee shall comply with all applicable reporting and recordkeeping requirements in accordance with 40 CFR 60.48c."

These conditions indicate the facility must comply with the recordkeeping and reporting requirements of Subpart Dc.

5.10 Volatile Organic Liquid Storage Vessels [40 CFR 60 Subpart Kb]

Permit condition 2.14 through 2.14.2 outline the applicability requirements for volatile organic liquid storage vessels. Permit Condition 2.14.3 outlines the recordkeeping requirements containing the dimensions and an analysis showing the capacity of each storage vessel as specified in 40 CFR 60.110b(b).

5.11 National Emissions Standards for Emissions of Radionuclides other than Radon from DOE Facilities

5.11.1 Requirement

Permit Condition 2.15 states: "Emissions of radionuclides to the ambient air from DOE facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr."

The condition quotes the standard given in 40 CFR 61.92. All INL radionuclide sources are subject to 40 CFR 61 Subpart H.

5.11.2 Compliance Assurance

Permit Condition 2.15.1 states: "In accordance with 40 CFR 61.93, the permittee shall determine radionuclide emissions and calculate effective dose equivalent values to members of the public using EPA-approved sampling procedures."

Permit Condition 2.15.2 states: "The permittee shall submit annual reports and maintain records documenting radionuclide emissions and effective dose equivalent values in accordance with 40 CFR 61.94 and .95."

The condition summarizes compliance and reporting requirements in 40 CFR 61.94 and recordkeeping requirements according to 40 CFR 61.95.

5.12 National Emissions Standard for Asbestos

5.12.1 Requirement

Permit Condition 2.16.1 states: "Any renovation or demolition activity planned at the facility shall be conducted in accordance with 40 CFR 61.145. New materials to be used during any renovation at the facility shall comply with standards given in 40 CFR 61.146 for spray-on materials and 40 CFR 61.148 for insulating materials. Waste disposal for demolition, renovation, and spraying operations shall be conducted in accordance with 40 CFR 61.150 in prevention of visible emissions to the outside air of any asbestos-containing material. Air cleaning during demolition and renovation activities shall be conducted in accordance with 40 CFR 61.152. Any renovation or demolition activity planned at the facility shall comply with 40 CFR 61.153 for reporting requirements to EPA."

The condition summarizes the requirements of standards given in 40 CFR 61 Subpart M that apply to renovation and demolition activities, and the concomitant activities that occur during renovation or demolition. This regulation is intended to prevent visible emissions of asbestos during the renovation or demolition of a facility or part of a facility, and during the operation of asbestos disposal sites. During demolition or renovation activities, protection of public employees shall occur in accordance with 40 CFR 763 Subpart G and worker protection measures shall occur in accordance with 29 CFR 1910.1001(j)(2) and 29 CFR 1926.1101. [Note: The NESHAP citation 40 CFR 61.150(a)(1)(iv) still references the OSHA citation 29 CFR 1926.58(k)(2)(iii) for worker protection for all construction work involving asbestos, including demolition and renovation. However, the OSHA section has been promulgated more recently than the NESHAP, and OSHA has subsequently removed 29 CFR 1926.58 and updated it to 29 CFR 1926.1101.] Any transportation of asbestos-containing waste material necessary during demolition or renovation activities shall occur in accordance with 49 CFR 171 and 172.

The requirements in 40 CFR 61.145 apply to planning any demolition or renovation activity. A thorough inspection for the presence of asbestos applies to any owner or operator of a demolition or renovation activity. The standard given in 40 CFR 61.146 regulates the amount of asbestos-containing materials allowable in spray-on materials, gives applicable notification requirements, and prohibits the discharge of visible emissions to the outside air. The standard given in 40 CFR 61.148 regulates the properties of insulating materials being installed or reinstalled. Procedures given in 40 CFR 61.150 prevent the release of visible asbestos emissions during waste disposal activities. Standards for the type and proper use of air cleaning collection devices used during renovation and demolition activities are given in 40 CFR 61.152. Finally, reporting activities shall follow the requirements given in 40 CFR 61.153.

Permit Condition 2.16.3 states: "The permittee shall operate active waste disposal facilities for asbestos-containing material in accordance with 40 CFR 61.154."

The INL has identified two waste disposal facilities for asbestos-containing material: the SDA at the RWMC and the CFA INL landfill complex. Asbestos waste disposal facilities are subject to compliance with the standard given in 40 CFR 61.154.

5.13 MACT STANDARDS SUMMARY

5.13.1 National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations, Publicly Owned Treatment Works

40 CFR 63 Subpart DD applies to facilities that satisfy the criteria listed in both 40 CFR 63.680(a)(1) and 63.680(a)(2). 40 CFR 63.680(a)(2) states: "At the plant site is located one or more of operations that receives off-site materials as specified in paragraph (b) of this section and the operations is one of the following waste management operations or recovery operations as specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section."

To be subject to the regulations within Subpart DD, a facility must receive off-site materials as specified in 40 CFR 63.680(b). Subpart DD lists exclusions to the definitions of off-site materials in 40 CFR 63.680(b)(2). The following two exclusions apply to the INL facility.

40 CFR 63.680(b)(2)(ii): "Radioactive mixed waste managed in accordance with all applicable regulations under Atomic Energy Act and Nuclear Waste Policy Act authorities."

40 CFR 63.680(b)(2)(iii): "Waste that is generated as a result of implementing remedial activities required under the Resource Conservation and Recovery Act (RCRA) corrective action authorities (RCRA sections 3004(u), 3004(v), or 3008(h)), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authorities, or similar Federal or State authorities." There is also a facility-wide exemption defined in 40 CFR 63.680(d): "The owner or operator of affected sources subject to this subpart is exempted from the requirements of §§ 63.682 through 63.699 of *this subpart* in situations when the total annual quantity of the HAP that is contained in the off-site material received at the plant site is less than one megagram per year."

DOE submitted to DEQ on May 31, 2002 a certified statement of the amount of off-site material received at INEC for the calendar years 1999, 2000, and 2001. According to the statement, the INL facility did not receive off-site material, as defined in 40 CFR 63 Subpart DD, with a total annual quantity of HAPs greater than or equal to 1 megagram (~ 1.1 tons) per year. Therefore, INL is not subject to the regulations within 40 CFR 63, Subpart DD.

5.13.2 National Emission Standards for Wood Furniture Manufacturing Operations

40 CFR 63 Subpart JJ applies to each facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and that is located at a plant site that is a major source as defined in 40 CFR part 63, subpart A. The DOE has certified in the Title V Operating Permit application that the INL facility is considered a major source of HAP emissions as defined in 40 CFR 63. In addition, a portion of the INL meets the applicability requirements of 40 CFR 63 Subpart JJ.

In accordance with § 63.800(a), the owner or operator of a source that meets the definition for an incidental wood furniture manufacturer shall maintain purchase or usage records demonstrating that the source meets the definition in § 63.801 of this subpart, but the source shall not be subject to any other provisions of this subpart. In accordance with § 63.801(a), an Incidental wood furniture manufacturer means a major source that is primarily engaged in the manufacture of products other than wood furniture or wood furniture components and that uses no more than 100 gallons per month of finishing material or adhesives in the manufacturer of wood furniture or wood furniture components. The DOE has certified in the Title V Operating Permit application that the INL facility meets the definition of an Incidental wood furniture manufacturer because INL is not a facility that is primarily engaged in the manufacturer of wood furniture or wood furniture components.

Tier I Permit Conditions 2.18 through 2.18.2 includes appropriate recordkeeping requirements to ensure the INL facility demonstrates monthly compliance with the incidental wood manufacture applicability.

5.14 Regulated Substances for Accidental Release Prevention

The facility certified in the permit application that it does not have sources that are at threshold levels of any specified chemicals as determined in accordance with 40 CFR 68.115. Therefore, the facility is currently not subject to the requirements of 40 CFR 68. However, should the facility ever become subject to 40 CFR 68, it must comply with the requirements of the chemical accident prevention provisions no later than the latest of the following dates:

Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR 68.130; or the date on which a regulated substance is first present above a threshold quantity in a process.

5.15 Protection of Stratospheric Ozone

The regulations in 40 CFR 82 Subparts B and F are intended to reduce Class I and Class II refrigerants emissions to the lowest achievable level during the service, maintenance, repair, and disposal of appliances and motor vehicle air conditioners. These regulations are in accordance with CAA Sections 608 and 609. Refer to Permit Condition 2.20, through 2.21 and 40 CFR 82.

6. ALTERNATIVE OPERATING SCENARIOS

Currently, the INL does not use any alternative operating scenarios and has not requested any in the application.

7. TRADING SCENARIOS

The INL has not requested any trading scenarios in the application.

8. COMPLIANCE CERTIFICATION

The INL Tier I Operating Permit application certified that the facility is in compliance with all applicable requirements in accordance with IDAPA 58.01.01.314.09. No compliance schedule in accordance with IDAPA 58.01.01.314.10 was submitted in the INL Tier I Operating Permit application. All existing applicable requirements are consolidated into the Tier I operating permit.

9. ACID RAIN PERMIT

Fossil fueled emissions units located within INL facility boundaries are exempt from the operating, recordkeeping, and reporting requirements of the acid rain program per 40 CFR 72.6(b)(8). Emissions units within INL facility boundaries are classified as Small Industrial/Commercial/Institutional Steam Generating Units and are subject to the provisions and restrictions identified in 40 CFR 60 Subpart Dc. Refer to Permit Conditions 2.13 through 2.13.7 for applicable requirements, emissions limits, monitoring, recordkeeping, and reporting requirements.

In accordance with 40 CFR 72.6(b)(8), non-utility units are not subject to the requirements of the acid rain program. This citation specifically exempts any non-utility combustion units. The boilers and generators at INL fall under this exemption.

10. AIRS DATABASE

AIRS/AFS FACILITY-WIDE CLASSIFICATION DATA ENTRY FORM

AIR PROGRAM / POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION A - Attainment U - Unclassifiable N - Nonattainment
SO_2	B		B				U
NO_x	A	A	A			A	U
CO	A	A				A	U
PM_{10}	B						U
PT (Particulate)	B		B				
VOC (Ozone)	B		B				U
THAP (Total HAPs)	A			X			
			APPLICABLE SUBPART				
			Dc and b	H and M			

AIRS/AFS CLASSIFICATION CODES:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant that is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Class is unknown.

11. REGISTRATION FEES

The INL is in compliance with annual registration fee requirements.

12. ARGONNE NATIONAL LABORATORY – WEST

12.1 Current Permits To Construct

PTC No. 011-00022 was issued August 26, 2000 for the Sodium Processing Facility.

PTC No. 011-00022 was issued May 9, 2001 for the FCF. This permit superseded all previous permits for the FCF.

PTC No. 011-00022 was issued February 20, 2003 for the Utility Spray Paint Booth.

PTC No. P-020521 was issued December 1, 2003. Within this PTC, INL-wide NO_x sources were permitted. Sources of NO_x within ANL-W include four boilers.

12.2 Facility Description

Argonne National Laboratory-West (ANL-W) is located on the southeastern corner of the INL in Bingham County, Idaho. The University of Chicago through the DOE Chicago Operations Office operates ANL-W for the Department of Energy. ANL-W is a research facility that has contributed significantly to knowledge advancements in liquid metal fast breeder reactor technology, extreme Condition fuels and reactor materials behavior. While continuing its leadership role in advanced nuclear power research and development, ANL-W is also involved in spent nuclear fuel and waste treatment technologies, remediation efforts, and projects to support space exploration and national security programs.

12.3 Regulatory Analysis

12.3.1 INEEL-WIDE NO_x SOURCES

Nitrogen oxides emissions from several sources at the INEEL facility are regulated in PTC No. P-020521, which was issued to DOE on December 1, 2003. Included in this permit are four boilers located at ANL-W. No control equipment is associated with any of these boilers.

Existing Permit Condition– NO_x Emissions Limit [PTC No. P-020521, 12/1/03]

"4.4 Emission Limits

NO_x emissions from all INEEL-wide NO_x sources shall not exceed their corresponding pound-per-hour (lb/hr) or tons-per-year (T/yr) emission limits listed in Table 4.1."

Table 4.1 INEEL-WIDE NO_x SOURCES EMISSIONS LIMITS

Source Description	NO_x	
	lb/hr	T/yr
ANL Boiler No. 1 (Keeler boiler)	3.36	14.72
ANL Boiler No. 2 (Keeler boiler)	3.36	14.72
ANL Boiler No. 3 (Keeler boiler)	3.36	14.72
ANL Boiler No. 4 (Cleaver Brooks boiler)	3.74	14.72
CFA-650 B-25 (Cleaver Brooks boiler)	0.58	1.90
CFA-662 B-28 and B-35 (one stack)	0.96	3.14
CFA-671 B-33 and B-34 (one stack)	1.52	4.98
CFA-688 B-101 and B-102 (one stack)	2.32	7.21
NRF Boiler No. 1 (Vogt boiler)	22.66	37.13
NRF Boiler No. 2 (Vogt boiler)	22.66	37.13
NRF Boiler No. 3 (Vogt boiler)	22.66	37.13
PBF-620 M-31 (Cyclotherm boiler)	0.24	0.79

Applicable Requirement as it Appears in Tier I Operating Permit

PTC Condition 4.4 is incorporated in the Tier I permit as Condition 3.1.1. Clarifications made to this PTC condition include selecting only the limits that apply to boilers at this facility (the other limits are included in the appropriate places in this Tier I permit) and defining the hourly averaging and annual tracking periods. Also, in the facility draft comments, Comment No. 18 stated, "ANL-W Boiler No. 3 is a Murray boiler, not a Keeler boiler." Therefore, the Table 3.2 was modified to show this comment. Tier I Permit Condition 3.1.1 appears as follows:

"3.1.1 Oxides of nitrogen emissions from the boilers shall not exceed any corresponding emission rate limit listed in Table 3.2.

Table 3.2 OXIDES OF NITROGEN EMISSIONS FROM THE BOILERS

Source Description	NO_X (lb/hr)[1]	NO_X (T/yr)[2]
ANL Boiler No. 1 (Keeler boiler)	3.36	14.72
ANL Boiler No. 2 (Keeler boiler)	3.36	14.72
ANL Boiler No. 3 (Murray boiler, identified in P-020521 as Keeler boiler)	3.36	14.72
ANL Boiler No. 4 (Cleaver Brooks boiler)	3.74	14.72

[1] average pounds-per-hour per month
[2] tons per consecutive 12-month period."

Compliance Assurance

The existing applicable requirement did not have appropriate operating or monitoring requirements. The following permit conditions were added to the Tier I Operating Permit to assure compliance:

"3.1.2 The permittee shall only burn ASTM grade No. 1, 2, and 4 fuel oils alone or as a mixture based upon ASTM standards for fuel oils in ANL Boiler No. 1, ANL Boiler No. 2, ANL Boiler No. 3, and ANL Boiler No. 4."

"3.1.3 The permittee shall monitor and record the monthly and consecutive 12-month period fuel consumption and type of fuel combusted by each boiler identified in Table 3.2. The most recent five-year compilation of records shall be kept onsite and shall be made available to DEQ representatives upon request."

"3.1.4 The permittee shall calculate and record the average pounds per hour per month NO_x emissions and NO_x emissions per consecutive 12-month period from each boiler listed in Table 3.2 using appropriate EPA AP-42 or manufacturer supplied emissions factors, or a DEQ approved alternative method. A compilation of the most recent five-years of records shall be maintained onsite and shall be made available to DEQ representatives upon request."

12.3.2 UTILITY PAINT SPRAY BOOTH

Existing Permit Condition – Emissions Limits [PTC No.011-00022, 2/20/03]

The footnotes for Table 2.2 appear in the Summary of Emissions Limits section of the PTC, not in Permit Condition 2.1.

"2.1 Emissions Control Description

The particulate matter (PM) and volatile organic compound (VOC) emissions from the utility paint spray booth stack shall not exceed any corresponding emissions rate limits listed in Table 2.2.

Table 2.2 Utility Paint Spray Booth Emissions Limits

Source Description	PM	VOC
	T/yr	T/yr
Utility Paint Spray Booth	0.2	0.8

[a] As determined by pollutant specific promulgated U.S. EPA method, or DEQ approved alternative, or as determined by DEQ emissions estimation methods used in this permit analysis.

[b] As determined by multiplying the actual or allowable (if actual is not available) pounds per hour emissions rate by the actual hours per year the process(es) operate(s)."

Applicable Requirements as they Appear in the Tier I Operating Permit

PTC Condition 2.1 is incorporated in the Tier I permit as Condition 3.2.1. PTC Table 2.2 is incorporated in the Tier I permit as Table 3.4.

Compliance Assurance

Compliance with the emissions limits are assured by Permit Conditions 3.2.2 through 3.2.7.

Existing Permit Conditions –Opacity Limit [PTC No.011-00022, 2/20/03]

"2.3 Opacity Limit

Emissions from the paint spray booth stack, or any other stack, vent, or functionally equivalent opening associated with the paint spray booth shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625."

Applicable Requirements as they Appear in the Tier I Operating Permit

PTC Condition 2.3 is incorporated in the Tier I permit as a Facility-Wide requirement. Refer to the "Visible Emissions" requirement located in Section 2.

Existing Permit Conditions –Paint Types [PTC No.011-00022, 2/20/03]

"2.4 Paint Types

Only those paints and solvents as submitted in the permit application, or comparable replacements, which comply with the emissions limits in Permit Condition 2.2 of this permit may be used in the utility paint spray booth unless prior DEQ approval is obtained."

Applicable Requirements as they Appear in the Tier I Operating Permit

PTC Condition 2.4 is incorporated in the Tier I permit as Condition 3.2.2.

Compliance Assurance

The appropriate monitoring and recordkeeping requirements to assure compliance with the paints and solvents type restriction are adequately addressed by the PTC. This monitoring and recordkeeping condition appears in the Tier I permit as Condition 3.2.7.

Existing Permit Conditions –Exhaust Filter O&M Manual [PTC No.011-00022, 2/20/03]

"2.5 Exhaust Filter Operations and Maintenance (O&M) Manual

Within 60 days of permit issuance the permittee shall have developed an O&M manual for the exhaust filter. This manual shall contain, at a minimum, the filter replacement schedule. The manual shall remain on site and be made available to DEQ representatives upon request."

Applicable Requirements as they Appear in the Tier I Operating Permit

PTC Condition 2.5 is incorporated in the Tier I permit as Condition 3.2.3. A clarification made to this PTC condition is to specify the issue date of the PTC. Tier I Permit Condition 3.2.3 appears as follows:

"3.2.3 Within 60 days of February 20, 2003, the permittee shall have developed an O&M manual for the exhaust filter. This manual shall contain, at a minimum, the filter replacement schedule. The manual shall remain on site and be made available to DEQ representatives upon request."

Existing Permit Conditions –Exhaust Filter Use [PTC No.011-00022, 2/20/03]

"2.6 Exhaust Filter Use

The utility paint spray booth shall not be operated unless all exhaust filters are in place and intact."

Applicable Requirements as they Appear in the Tier I Operating Permit

PTC Condition 2.6 is incorporated in the Tier I permit as Condition 3.2.4

Existing Permit Conditions –Filter Type [PTC No.011-00022, 2/20/03]

"2.7 Filter Type

Only filters which have a manufacturer guarantee to remove at least 87% of particulate shall be used in the cabinet type exhaust chamber."

Applicable Requirements as they Appear in the Tier I Operating Permit

PTC Condition 2.7 is incorporated in the Tier I permit as Condition 3.2.5

Compliance Assurance

The following permit condition has been added to the permit to assure compliance with the existing filter efficiency limitations:

"3.2.6 The permittee shall maintain documentation of the type and manufacturer's guarantee of particulate removal efficiency for all filters that are used in the exhaust chamber to demonstrate compliance with Permit Condition 3.2.5. The documentation shall remain on site and be made available to DEQ representatives upon request."

Existing Permit Conditions –Paint and Solvent Records [PTC No.011-00022, 2/20/03]

"2.9 Paint and Solvent Records

The permittee shall maintain records of the types, quantities, solvent content, and date of application for all paints and solvents used in the paint booth. The permittee shall calculate the total VOC emissions for the previous month assuming all solvents are emitted to the atmosphere. The most recent two years of records shall be maintained onsite and made available to DEQ representatives upon request."

Applicable Requirements as they Appear in the Tier I Operating Permit

PTC Condition 2.9 is incorporated in the Tier I permit as Condition 3.2.7. The recordkeeping maintenance period was changed from two years in the PTC to five years in the Tier I Operating Permit.

12.3.3 FUEL CONDITIONING FACILITY

The existing permit for the FCF contains three applicable requirements. These requirements are listed below and are included in the facility-wide permit conditions of the Tier I Operating Permit. All other conditions of this permit are state-only and are not included in the Tier I operating permit.

Existing Permit Condition – Radionuclide Emissions [PTC No. 011- 00022, 5/9/01]

"2.1 Radionuclide emissions emanating from the ANL-W Main Stack (Source No. ANL-764-001), combined with all other airborne radionuclides from all DOE/INEEL facilities, shall not result in an effective dose equivalent to the maximally exposed off-site member of the public where there is a residence, school, business or office which exceeds 10 millirems per year (mrem/yr) as per 40 CFR 61.92 and 94."

Applicable Requirement as it Appears in the Tier I Operating Permit

PTC Condition 2.1 is incorporated in the Tier I permit as a Facility-Wide requirement. Refer to the "National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities" requirement located in Section 2.

Existing Permit Condition – Radionuclide Emissions [PTC No. 011- 00022, 5/9/01]

"2.2 The permittee shall determine the effective dose equivalent values to members of the public using methods specified in 40 CFR 61.93."

Applicable Requirement as it Appears in the Tier I Operating Permit

PTC Condition 2.2 is incorporated in the Tier I permit as a Facility-Wide requirement. Refer to the "National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities" requirement located in Section 2.

Existing Permit Condition – Radionuclide Monitoring [PTC No. 011- 00022, 5/9/01]

"4.2 Continuous Emission Monitoring System

The permittee shall have in place, calibrated, and operating, an in-stack continuous emission monitoring system for the measurement of radionuclides following the guidance of ANSI-N 13.1 "Guide to Sampling Airborne Materials in Nuclear Facilities." The permittee shall maintain a current Quality Assurance Project Plan (QAPP) which describes the installation (dates), quality assurance, reporting format and maintenance procedures."

Applicable Requirement as it Appears in the Tier I Operating Permit

PTC Condition 4.2 is incorporated in the Tier I permit as a Facility-Wide requirement. Refer to the "National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities" requirement located in Section 2.

12.3.4 SODIUM PROCESS FACILITY

Existing Permit Condition – Process Description [PTC No. 011- 00022, 9/26/00]

The SPF PTC Section 1 is the source description. The PTC source description is paraphrased and listed in the Tier I Operating Permit summary description.

Existing Permit Condition – Radionuclide Emissions [PTC No. 011- 00022, 9/26/00]

"2.1 Radionuclide emissions emanating from the Sodium Process Facility vents, combined with all other airborne radionuclides from all DOE/INEEL facilities, shall not result in an effective dose equivalent to the maximally exposed off-site member of the public where there is a residence, school, business or office which exceeds 10 millirems per year (mrem/yr) as per 40 CFR 61.92 and 94. Furthermore, unabated radionuclide emissions emanating from the Sodium Process Facility vents exclusive of all other DOE/INEEL emissions shall not result in an effective dose equivalent at any business, school or residence which exceeds 8.8E-02 millirems per year (mrem/yr) as per applicant's worst case exposure scenario utilizing the estimated maximum unabated annual emissions."

Applicable Requirement as it Appears in the Tier I Operating Permit

This permit condition has changed from the form of the original applicable requirement that exists in PTC No. 011-00022, September 26, 2000. The change in form serves to segregate applicable requirements from state-only permit conditions. The last sentence of the original form of the permit term is a state-only permit condition and is not included in the Tier I operating permit.

The portion of PTC Condition 2.1 that is an applicable requirement is incorporated in the Tier I permit as a Facility-Wide requirement. Refer to the "National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities" requirement located in Section 2.

Existing Permit Condition – Radionuclide Emissions [PTC No. 011- 00022, 9/26/00]

"2.2 The permittee shall determine the effective dose equivalent values to members of the public using methods specified in 40 CFR 61.93."

Applicable Requirement as it Appears in the Tier I Operating Permit

PTC Condition 2.2 is incorporated in the Tier I permit as a facility-wide requirement. Refer to the "National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities" requirement located in Section 2.

Existing Permit Condition – Radionuclide Reporting [PTC No. 011- 00022, 9/26/00]

"5.3 The permittee shall submit an annual report to DEQ indicating the highest dose equivalent as required in 40 CFR 61.94."

Applicable Requirement as it Appears in the Tier I Operating Permit

PTC Condition 5.3 is incorporated in the Tier I permit as a Facility-Wide requirement. Refer to the "National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities" requirement located in Section 2.

13. CENTRAL FACILITIES AREA

13.1 Current Permits To Construct

February 14, 1996	PTC No. 023-00001 was issued for the Cleaver Brooks boiler CB-101-50.
December 1, 2003	PTC No. P-020521 was issued to permit INEEL-wide NO_x sources. Sources of NO_x within CFA include the following boilers: CFA-650 B-25, CFA-662 B-28 and B-35 (one stack); CFA-671 B-33 and B-34 (one stack); and CFA-688 B-101 and B-102 (one stack).

13.2 Source Description

The CFA encompasses about 550 acres in the southwestern portion of the INEEL site and contains over 80 buildings. The purpose of CFA is to provide technical and support services to the INEEL site. These services include environmental monitoring and calibration laboratories, communication systems, security, fire protection, medical services, warehouses, cafeteria, vehicle and equipment pools, the INEEL landfill complex, hazardous waste storage, DOE-ID West offices, and bus operations.

Administratively, the INEEL has been divided into a grid system where each grid area is identified as a block area having a unique number. Utility services and areas outside facility fence lines within these block areas are administered by the CFA landlord.

13.3 Regulatory Analysis

13.3.1 GENERAL

Two common changes to "applicable requirements" in the PTCs were made consistently throughout the Tier I Operating Permit. First, the Tier I Operating permit requires records to be maintained onsite for five-year periods whereas many PTCs require that records be maintained for two-year periods. This is because IDAPA 58.01.01.322.07(c) requires that Tier I Operating Permit records be maintained for a five-year period.

Second, the Tier I permit establishes annual emissions limits and throughput limits "per consecutive 12-month period" whereas some PTC permit conditions limit emissions to "yearly." When the PTC conditions were written, "year" was defined as a "calendar year" by the Rules. The Tier I permit now makes it clear that "yearly" emissions means consecutive 12-month periods. The change from the original form is the direct result of a change in DEQ/EPA policy.

13.3.2 BOILER CFA-609-005

According to the INEEL Title V Operating Permit application, Boiler CFA-609-005 was installed or last modified in 1987. The most recent permit for this boiler was PTC No. 023-00001 issued on February 14, 1996. Note that the boiler was identified as "Cleaver Brooks CB-101-50" in the PTC, and there is no emission control equipment associated with this boiler. The boiler is located in the Safeguards and Securities Building (CFA-609).

Existing Permit Condition – PM Emission Rate Limits [PTC No. 023-00001, 2/14/96]

"2.1 Particulate Matter Emission

"Particulate matter emissions from the boiler exhaust stack shall not exceed 0.03 lb/hr or 0.025 T/yr."

Applicable Requirement as it Appears in the Tier I Operating Permit

These limits are stated in the Tier I permit with the following clarification. The hourly PM emissions limits are based on a monthly average, and the annual PM emissions limits are based on any consecutive 12-month period.

Compliance Assurance

Operating, monitoring and recordkeeping requirements for purposes of demonstrating compliance with the emissions limit are included in the PTC as PTC Conditions 3.1, 3.2, and 4.1. These permit conditions are incorporated into the Tier I permit as described below. However, these PTC conditions alone do not provide sufficient monitoring and recordkeeping for purposes of demonstrating compliance with the applicable requirement. Therefore, in accordance with IDAPA 58.01.01.322.06 and .07, an additional monitoring and recordkeeping condition was developed and incorporated into the Tier I permit as follows:

"4.1.7 The permittee shall calculate and record the average pounds per hour per month PM emissions and PM emissions per consecutive 12-month period from Boiler CFA-609-005 using appropriate EPA AP-42 or manufacturer supplied emissions factors, or a DEQ approved alternative method. A compilation of the most recent five years of records shall be maintained onsite and shall be made available to DEQ representatives upon request."

Compliance with the hourly and annual PM emissions limits is assured through monitoring the fuel usage through the boiler, and calculating subsequent PM emissions using appropriate EPA AP-42 emissions factors corresponding to the fuels combusted. Compliance or noncompliance with the hourly PM emissions limit is demonstrated by using the following equation:

$(X_a$ lb/1,000 gal)(Y gal/month)(1 month/Z hr) = X lb/hr on a monthly basis

Where X_a = PM emissions factor for fuel burned;
Y = monthly fuel usage; and
Z = total hrs of individual boiler operation during the month.

Compliance or noncompliance with the annual PM emissions limit is assured using the following equation:

(X_a lb/1,000 gal)(Y gal/yr)(1 T/2,000 lbs) = X T/yr

Where X_a = PM emissions factor for fuel burned; and
Y = annual fuel usage, based on a consecutive 12-month period.

The ton per year emissions rate is an annual limit based on consecutive 12-month periods. The results of the calculations over the appropriate time period will be used to assure compliance.

Existing Permit Condition – Opacity Limits [PTC No. P-030501, 5/20/04]

"2.2 Visible Emissions

Visible emissions from the boiler stack shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60 minute period as required by IDAPA 16.01.01.625 (Rules for the Control of Air Pollution in Idaho) and as determined using the 'Department's Procedures Manual for Air Pollution Control'."

Applicable Requirement as it Appears in the Tier I Operating Permit

PTC Condition 2.2 is incorporated in the Tier I permit as a facility-wide requirement. Refer to the "Visible Emissions" requirement located in Section 2.

Existing Permit Condition – Fuel Oil Specification [PTC No. 023-00001, 2/14/96]

"3.1 Fuel Oil Specification

The boiler shall burn No. 2 fuel oil, JP-4, or JP-8 fuel. The sulfur content of the fuel shall not exceed 0.50% by weight as specified in IDAPA 16.01.01.728.02."

Applicable Requirement as it Appears in the Tier I Operating Permit

This permit condition was included in the Tier I permit as two separate conditions with no changes.

Compliance Assurance

Compliance with this applicable operating requirement is provided by the requirement in Tier I Permit Condition 4.1.5 which requires the permittee to maintain records of fuel supplier documentation.

Existing Permit Condition – Fuel Oil Consumption [PTC No. 023-00001, 2/14/96]

"3.2 Fuel Oil Consumption

The total fuel consumption of the boiler shall not exceed 25,000 gallons per year."

Applicable Requirement as it Appears in the Tier I Operating Permit

This permit condition was included in the Tier I permit with one change. The term "gallons per year" was replaced with the term "gallons per any consecutive 12-month period." Compliance is demonstrated by meeting the monitoring and recordkeeping requirements specified by PTC Condition 4.1 which has been incorporated into the Tier I permit.

Existing Permit Condition – Fuel Consumption [PTC No. 023-00001, 2/14/96]

"4.1 Fuel Consumption

The permittee shall monitor and record in a log the fuel consumption of the boiler on a monthly basis. The most recent two-year collection of data shall be kept on-site and shall be made available to DEQ representatives upon request."

Applicable Requirement as it Appears in the Tier I Operating Permit

PTC monitoring Condition 4.1 was revised to clarify the averaging times and to obtain data on the type of fuel combusted . This information is necessary for demonstrating compliance with the PTC emission limits and operating requirements. Using the information obtained from this permit condition, the permittee will be able to calculate and record the average pounds per hour per month PM emissions and PM emissions per consecutive 12-month period from Boiler CFA-609-005 to demonstrate compliance with the emissions rate limits.

13.3.3 INEEL –Wide NO_x Sources; Boilers CFA-650-007, CFA-662-011, CFA-662-027, CFA-671-007, CFA-671-008, CFA-688-043, and CFA-688-044

Nitrogen oxides emissions from several sources at the INEEL facility are regulated in the INEEL NO_x Sources Permit, PTC No. P-020521, issued on December 1, 2003. Included in this permit are the following boilers located at CFA:

CFA-650-007 - identified as CFA-650 B-25 in the original permit,

CFA-662-011 - formerly CFA-662 B-28,

CFA-662-027 - formerly CFA-662 B-35,

CFA-671-007 - formerly CFA-671 B-33,

CFA-671-008 - formerly CFA-671 B-34,

CFA-688-043 - formerly CFA-688 B-101, and

CFA-688-044 - formerly CFA-688 B-102.

According to the INEEL Title V Operating Permit application, these boilers were installed or last modified between 1962 and 1980. No control equipment is associated with any of these boilers.

Existing Permit Condition – NO_x Emissions Limit [PTC No. P-020521, 12/01/03]

"4.4 Emission Limits

NO_x emissions from all INEEL-wide NO_x sources shall not exceed their corresponding pound-per-hour (lb/hr) or tons-per-year (T/yr) emissions limits listed in Table 4.1."

Only a portion of Table 4.1 applies to boilers located at the CFA.

Applicable Requirement as it Appears in the Tier I Operating Permit

The limits which apply to the CFA boilers are included in the Tier I Operating Permit. For clarification, the hourly NO_x emissions limits are based on a monthly average, and the annual NO_x emissions limits are based on any consecutive 12-month period. The NO_x emissions limits appear in the Tier I permit as follows:

"4.2.1 Oxides of nitrogen emissions from the boilers shall not exceed any corresponding emission rate limit listed in Table 4.3.

Table 4.3 OXIDES OF NITROGEN EMISSIONS FROM THE BOILERS

Source Description	NO_x (lb/hr)[1]	NO_x (T/yr)[2]
Boiler CFA-650-007	0.58	1.90
Combined emissions from CFA-662-011 and CFA-662-027 (one stack)	0.96	3.14
Combined emissions from CFA-671-007 and CFA-671-008 (one stack)	1.52	4.98
Combined emissions from CFA-688-043 and CFA-688-044 (one stack)	2.32	7.21

[1] Pounds per hour based on a monthly average
[2] Tons per year based on any consecutive 12-month period."

The original permit term was changed to clarify that the hourly NO_x emissions limits are based on hourly averages calculated on a monthly basis, and the annual NO_x emissions limits are based on any consecutive 12-month periods.

Compliance Assurance

The NO_x emission rate limits in the PTC did not have appropriate monitoring and recordkeeping requirements. Therefore, the following permit conditions were added to the Tier I Operating Permit to assure compliance:

"4.2.2 The permittee shall monitor and record the monthly and consecutive 12-month period fuel consumption and type of fuel combusted by each boiler listed in Table 4.3. For boilers with a combined emission rate limit (CFA-662-011 and CFA-662-027; CFA-671-007 and CFA-671-008; CFA-688-043 and CFA-688-044), the combined fuel consumption may be monitored and recorded. A compilation of the most recent five years of records shall be maintained onsite and shall be made available to DEQ representatives upon request."

"4.2.3 The permittee shall calculate and record the average pounds per hour per month NO_x emissions and NO_x emissions per consecutive 12-month period from each boiler as listed in Table 4.3 using appropriate EPA AP-42 or manufacturer supplied emissions factors, or a DEQ approved alternative method. A compilation of the most recent five years of records shall be maintained onsite and shall be made available to DEQ representatives upon request."

Compliance with the hourly and annual NO_x emissions limits is assured through monitoring the fuel type and usage through each boiler, and calculating subsequent NO_x emissions using appropriate EPA AP-42 emissions factors for the fuels combusted. Compliance or noncompliance with the hourly NO_x emissions limit is demonstrated by using the following equation:

$(X_a$ lb/1,000 gal)(Y gal/month)(1 month/Z hr) = X lb/hr on a monthly basis

Where $X_a = NO_x$ emissions factors for fuel burned;

Y = monthly fuel usage; and

Z = total hrs of individual boiler operation during the month.

The NAAQS averaging period for NO_x is annual. Therefore, it is appropriate to assure compliance with the hourly NO_x emissions limit on a monthly basis.

Compliance or noncompliance with the annual NO_x emissions limit is assured using the following equation:

$(X_a$ lb/1,000 gal)(Y gal/yr)(1 T/2,000 lbs) = X T/yr

Where $X_a = NO_x$ emissions factor for fuel burned; and

Y = annual fuel usage.

The ton per year emissions rate is an annual limit based on consecutive 12-month periods. The results of the calculations over the appropriate time period will be used to assure compliance.

14. IDAHO NUCLEAR TECHNOLOGY AND ENGINEERING CENTER

14.1 Current Permits To Construct

April 5, 1996	For the reconfiguration of the fuel storage portion of the FAST facility.,
December 17, 1997	For the New Waste Calcining Facility/Decontamination Area.
March 4, 1998	For building the waste storage facility (CPP-1619).
December 1, 2003	This permit included requirements for the FAST facility, LET&D, ventilation air system, process off-gas system, and facility-wide NO_x sources.
January 21, 2004	For four distillate oil-fired boilers located in CPP-606.

14.2 Facility Description

The INTEC (formerly ICPP) is located in the southwestern portion of INEEL. The INTEC covers approximately 250 acres and contains over 150 buildings.

The current purpose of INTEC is to:

- receive and store DOE-assigned nuclear fuels,
- prepare sodium-bearing liquid and solid high level waste for disposition in a permanent repository,
- develop technologies for disposing spent nuclear fuel, sodium-bearing waste, and high-level waste, and
- develop and apply technologies to minimize waste generation and manage radioactive and hazardous wastes.

Major operating facilities at the INTEC include both storage and treatment facilities. Spent nuclear fuel is stored in pools and dry storage. Calcine (dry granular waste) is stored in bins and liquid sodium-bearing waste is stored in USTs. This material results from decommissioning contaminated facilities. Treatment facilities include the New Waste Calcining Facility, which treats liquid high-level waste and sodium-bearing waste, and an evaporator that concentrates low-level waste and mixed low-level waste. The LET&D facility prevents radioactive waste from being discharged to the percolation ponds and recovers nitric acid for reuse. Mixed waste and low-level waste are handled and stored in the hazardous and radioactive mixed waste staging area and the hazardous chemical and radioactive waste (HCRW) facility. Other operating facilities include process development, analytical, and robotics laboratories. Support facilities, such as utilities, maintenance, administrative, and engineering, are also located at the INTEC.

14.3 Regulatory Analysis

14.3.1 BUILDING CPP-606 - DISTILLATE OIL-FIRED BOILERS

Building CPP-606 houses four boilers. The application indicates the boilers were installed or last modified in July 2000. The boilers are permitted in PTC No. P-030505, January 21, 2004. A flue gas recirculation on each boiler provides NO_x emissions control. The boilers are subject to the NSPS in accordance with 40 CFR 60, Subpart Dc.

Existing Permit Condition – Section 2.1 & 2.2 [PTC No. P-030505, 1/21/04]

Existing permit Conditions 2.1 and 2.2 are process and emission control descriptions that are not repeated in the Tier I operating permit. A summary description is given in the Title V operating permit that conveys the same general information.

Existing Permit Condition – Section 2.3 [PTC No. P-030505, 1/21/04]

"2.3 The SO_2, NO_x, and beryllium emissions from the CPP-606 boiler stacks shall not exceed any corresponding emission rate limits listed in Table 2.1."

Table 2.1 CPP-606 BOILER EMISSIONS LIMITS*

Source Description	SO_2		NO_x		Beryllium	
	lb/day	T/yr	lb/day	T/yr	lb/day	T/yr
CPP-606 boilers	895	163	415	75.6	1.05E-02	1.91E-03

* The permittee shall not exceed the T/yr listed based on any consecutive 12-month period."

Applicable Requirement as it Appears in the Tier I Operating Permit

Tier I Operating Permit Conditions 5.1.1 is an exact quote of the underlying permit condition, with the exception that the table reference number has changed from Table 2.1 to Table 5.2.

Compliance Assurance

Tier I Operating Permit Conditions 5.1.5 limits the fuel to be combusted in the boilers to distillate fuel only and also limits the fuel sulfur content to 0.3%. Tier I Operating Permit Conditions 5.1.7 limits the daily combustion rate of fuel oil. These permit provisions assure compliance with the emission limits.

Existing Permit Condition – Section 2.4 [PTC No. P-030505, 1/21/04]

"2.4 In accordance with IDAPA 58.01.01676 (Rules for the Control of Air Pollution in Idaho), the permittee shall not discharge into the atmosphere from the Building CPP-606 boilers stacks any gases that contain particulate matter emissions in excess of 0.05 grains per dry standard cubic foot (gr/dscf) corrected to 3% oxygen."

Applicable Requirement as it Appears in the Tier I Operating Permit

Operating Permit Conditions 5.1.2 is an exact quote of the underlying applicable requirement.

Compliance Assurance

Compliance with Tier I Permit Condition 5.1.2 is assured by limiting the type of fuel combusted in the boilers to #2 fuel oil exclusively (Tier I Permit Condition 5.1.5). Appendix A of this technical memorandum contains a grain loading calculation which shows through using AP-42 emission factors and a combustion evaluation that particulate matter grain loading is below the standard when #2 fuel oil is combusted.

Existing Permit Condition – Section 2.5 [PTC No. P-030505, 1/21/04]

"2.5 The permittee shall not discharge into the atmosphere from the Building CPP-606 boilers stacks or any other stack, vent, or functionally equivalent opening, emissions that exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period, as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625."

Applicable Requirement as it Appears in the Tier I Operating Permit

Tier I Operating Permit Provision 5.1.3 is an exact quote of the underlying applicable requirement.

Compliance Assurance

Facility-wide Permit Condition 2.7 requires quarterly inspection of sources of visible emissions during normal operation. This permit condition also requires records to be kept on the results of the visible emissions inspection.

Existing Permit Condition – Section 2.6 [PTC No. P-030505, 1/21/04]

"2.6 In accordance with 40 CFR 60.43c, the permittee shall not discharge into the atmosphere from the Building CPP-606 boilers stacks any gases that exhibit greater than 20% opacity (six-minute average), except for one six-minute period per hour of not more than 27% opacity. The opacity standard shall apply at all times except during periods of startup, shutdown, or malfunction. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625 and as specified in 40 CFR Part 60."

Applicable Requirement as it Appears in the Tier I Operating Permit

Tier I Operating Permit Provision 5.1.4 is an exact quote of the underlying applicable requirement.

Compliance Assurance

Facility-wide permit Condition 2.14.5 specifies that compliance with the 40 CFR 60.43c opacity standard shall be determined in accordance with 40 CFR 60.45c and as required in 40 CFR 60.8, and IDAPA 58.01.01.157.

Existing Permit Condition – Section 2.7 [PTC No. P-030505, 1/21/04]

"2.7 The permittee shall combust distillate oil exclusively in the Building CPP-606 boilers. The distillate oil combustion in these boilers shall not contain greater than 0.3 weight percent sulfur."

Applicable Requirement as it Appears in the Tier I Operating Permit

Tier I Operating Permit Provision 5.1.5 is an exact quote of the underlying applicable requirement except that the word exclusively has been removed and replaced with the word only.

Compliance Assurance

Tier I Operating Permit Provision 5.1.8 requires monitoring of all the fuel combusted in the boilers to assure that the fuel meets the specifications of distillate fuel oil and to verify the sulfur content of all fuel oil combusted.

Existing Permit Condition – Section 2.8 [PTC No. P-030505, 1/21/04]

"2.8 In accordance with 40 CFR 60.42c(d), the permittee shall not combust distillate oil that contains greater than 0.5 weight percent sulfur in the Building CPP-606 boilers. In accordance with 40 CFR 60.41c, distillate oil means fuel oil that complies with the specification for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, 'Standard Specification for Fuel Oils'."

Applicable Requirement as it Appears in the Tier I Operating Permit

"5.1.6 In accordance with 40 CFR 60.42c(d), as an alternative to operating continuous emission monitor, the permittee shall not combust distillate oil that contains greater than 0.5 weight percent sulfur in the Building CPP-606 boilers. In accordance with 40 CFR 60.41c, distillate oil means fuel oil that complies with the specification for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, 'Standard Specification for Fuel Oils'."

The first sentence of the underlying applicable requirement has been modified to clarify that the 0.5 weight percent sulfur limitation is in lieu of a requirement to operate continuous emission monitor.

Compliance Assurance

Tier I Operating Permit Conditions 5.1.8 requires maintaining documentation of the fuel sulfur content for all fuel used in the boilers.

Existing Permit Condition – Section 2.9 [PTC No. P-030505, 1/21/04]

"2.19 The total amount of boiler fuel combusted for all Building CPP-606 boilers shall not exceed 20,736 gallons per day."

Applicable Requirement as it Appears in the Tier I Operating Permit

Tier I Operating Permit Provision 5.1.7 is an exact quote of the underlying applicable requirement.

Compliance Assurance

Tier I Operating Permit Conditions 5.1.9 requires daily monitoring of the amount of fuel combusted in the boilers.

Existing Permit Condition – Section 2.10 [PTC No. P-030505, 1/21/04]

"2.10 To demonstrate compliance with Sections 2.7 and 2.8 of this permit, the fuel oil supplier shall certify all boiler fuel combusted in the Building CPP-606. In accordance with 40 CFR 60.48c(f), fuel oil supplier certification shall include the name of the fuel oil supplier, and a statement from the fuel oil supplier that the fuel oil complies with the specifications under the definition of distillate oil in 40 CFR 60.41c."

Applicable Requirement as it Appears in the Tier I Operating Permit

"5.1.8 To demonstrate compliance with Sections 5.1.5 and 5.1.6 of this permit, the fuel oil supplier shall certify all boiler fuel combusted in the Building CPP-606. In accordance with 40 CFR 60.48c(f), fuel oil supplier certification shall include the name of the fuel oil supplier, and a statement from the fuel oil supplier that the fuel oil complies with the specifications under the definition of distillate oil in 40 CFR 60.41c. The permittee shall also maintain documentation of the fuel sulfur content of all oil used in the boilers. All records shall be maintained for a period of five years".

The underlying applicable required is modified to clarify that the permittee shall maintain records of the fuel sulfur content for a period of five years. The last two sentences of Section 5.1.6 of the Tier I Operating Permit are the only additions to the existing permit condition.

Existing Permit Condition – Section 2.13 [PTC No. P-030505, 1/21/04]

"2.13 In accordance with IDAPA 58.01.01.157.04, the permittee shall submit a written report of the performance test results to DEQ within 30 days of completion of the test."

Applicable Requirement as it Appears in the Tier I Operating Permit

2.13 in part states –

"... Within 30 days following the date in which a compliance test required by this permit is concluded, the permittee shall submit to DEQ a report for the respective test. The compliance test report shall include all process operating data collected during the test period as well as the test results, raw test data, and associated documentation, including any approved test protocol..."

The existing permit condition is covered by Facility-Wide Permit Condition 2.14 and is not repeated in the Idaho Nuclear Technology and Engineering Center section of the permit.

Existing Permit Condition – Section 2.16 [PTC No. P-030505, 1/21/04]

"2.16 All documents, including but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, and compliance certifications submitted to DEQ shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete."

Applicable Requirement as it Appears in the Tier I Operating Permit

"7. All documents submitted to DEQ shall be certified in accordance with IDAPA 58.01.01.123 and comply with IDAPA 58.01.01.124."

Tier I Operating Permit General Conditions 17 contains the existing Permit Condition 2.16 and it is not repeated in the Idaho Nuclear Technology and Engineering Center section of the permit.

Existing Permit Conditions – Section 2.11, 2.12, 2.14 & 2.15 [PTC No. P-030505, 1/21/04]

Exiting Permit Conditions 2.11, 2.12, 2.14 and 2.15 are included in the Tier I operating permit at 5.1.9, 5.1.10, 5.1.11 and 5.1.12. The Tier I operating permit conditions are exact quotes of the existing permit conditions except that record retention requirements of 5.1.9 and 5.1.12 have been modified from two years to five years in accordance with IDAPA 58.01.01.322.07. All of these permit conditions are monitoring and record keeping requirements to assure compliance with other permit conditions.

14.3.3 FLUORINEL AND STORAGE FACILITY

The Fluorinel and Storage Facility (FAST) consists of building CPP-666 and a 50-meter high exhaust stack. The FAST facility at the INTEC is a major facility for storing nuclear fuel. Two functional areas comprise FAST: the fuel storage area and the fluorinel dissolution process. Receipt, movement, and general handling of nuclear fuel is associated with fuel storage in the FAST facility. Fuel storage in FAST is maintained in large water-filled basins. Areas in the building and equipment associated with the past practice of dissolving fuel are shutdown.

The FAST facility is designed so that air flows from clean areas to progressively more contaminated areas before it is cleaned and released through the FAST stack. The FAST final exhaust is vented through four parallel sets of filters consisting of prefilters and a HEPA filter stage. Each HEPA stage is made up of 24 individual HEPA filters. Typically, all four separate air streams going through the filters are online. Any one of the separate filter banks may be isolated to allow maintenance or other activities. All building ventilation within the FAST facility is filtered by at least one stage of HEPA filtration prior to being released from the FAST stack.

Permits issued to INEEL for the FAST facility are P-020521, December 1, 2003.

Existing Permit Condition – Section 1. & Sections 2.1 – 2.4 [PTC No. P-020521, 12/1/03]

Section 1 of the existing permit simply states the scope of the permit to construct and is not repeated in the Tier I operating permit. Section 2.1 through 2.5 are the process description, emission control description, equipment listing and stack specifications which are not enforceable permit conditions and are not included in the Tier I operating permit.

Existing Permit Condition – Section 2.5, 2.6 , 2.8 & 2.10 [PTC No. P-020521, 12/1/03]

Existing Permit Conditions 2.5, 2.6, 2.8 and 2.10 are the *National Emission Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities(40 CFR 61, Subpart H)* and are listed in Section 2.17, 2.17.1 and 2.17.2 of the Tier I operating permit

Existing Permit Condition – Section 2.7 & 2.9 [PTC No. P-020521, 12/1/03]

Existing Permit Conditions 2.7 and 2.9 are state only HEPA filter operating and monitoring requirements which are not included in the Tier I operating permit

14.3.4 LIQUID EFFLUENT TREATMENT AND DISPOSAL FACILITY, VENTILATION AIR SYSTEM, AND PROCESS OFF-GAS SYSTEM

Three separate systems exhaust to the INTEC main stack: the LET&D system, the ventilation air system, and the process off-gas system. In addition to the pollution control systems for the main stack, individual processes have additional pollution control equipment.

The LET&D system treats the process equipment waste evaporator condensate, which is a low-level liquid waste, by an acid fractionation process. The acid portion or bottoms are stored in the tank farm. The remaining gaseous overheads are discharged to the main stack. The gaseous overheads produced in the fractionation process are processed through one of two parallel off-gas trains. These trains consist of a mist eliminator, a superheater, two banks of HEPA filters, and a blower. Liquid droplets are removed by mist eliminators and returned to the fractionators. The gas is then heated to ensure there is no liquid water in the stream. The HEPA filters remove any solids. There are two HEPA filter banks; one must operate whenever a fractionator operates. Each bank consists of two filter stages in series, with each stage containing two HEPA filters. The blower discharges the effluent into the atmosphere through the main stack.

The ventilation air system is comprised of ventilation air from several buildings in the INTEC facility. The air is used to heat, ventilate, and to provide contamination control for these facilities. The air, which comprises the bulk of the flow to the main stack, passes through the VAPS system. The VAPS system consists of a fiberglass bed prefilter, HEPA filters arranged in 26 parallel banks of four filters, and three blowers. The blowers discharge the effluent into the atmosphere through the main stack.

The PAPS flow is comprised of off-gas from the dissolver off-gas, the vessel off-gas system (including the tank farm facility, process equipment waste evaporator, fuel processing facilities, and pilot plant facilities), the NWCF off-gas system (including the NWCF calcination process (currently shut down by a consent order) and the evaporator tank system (a.k.a. high-level liquid waste evaporator system), and vents from bin sets 1, 2, and 3. The PAPS system consists of mist eliminator, a superheater, and a single stage of HEPA filters. Exhaust gases are discharged into the atmosphere through the main stack.

Permit to Construct No. P-020521 was issued to DOE December 1, 2003 for the LET&D, VAPS, and PAPS systems.

Existing Permit Condition – Section 3.1 through Sections 3.3 [PTC No. P-020521, 12/1/03]

Section 3.1 through 3.3 are the process description, emission control description, equipment listing and stack specifications which are not enforceable permit conditions and are not included in the Tier I operating permit.

Existing Permit Condition – Section 3.4 [PTC No. P-020521, 12/1/03]

"3.4 NO_x emissions shall not exceed 472 lb/hr, as determined by the in-stack continuous emission-monitoring system (CEMS), by approved U.S. EPA Reference Methods or approved alternative. Because the NWCF is the only substantial contributor of NO_x emissions to the main stack, continuous emission monitoring for NO_x is required only when the NWCF is operating. Annual NO_x emissions shall not exceed 1700 T/yr, as determined by summing the actual hourly emissions as shown by the CEMS and the results of any other emissions estimation methods that were used."

Applicable Requirement as it Appears in the Tier I Operating Permit

Existing Permit Condition 3.4 is included in the Tier I operating permit at Section 5.2.1 and is an exact quote of the underlying applicable requirement.

Existing Permit Condition – Section 3.5, 3.6, 3.9 and 3.12 [PTC No. P-020521, 12/1/03]

Existing Permit Conditions 3.5, 3.6,3.9 and 3.12 are the *National Emission Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities(40 CFR 61, Subpart H)* and are listed in Section 2.16, 2.16.1 and 2.16.2 of the Tier I operating permit.

Existing Permit Condition – Section 3.8 [PTC No. P-020521, 12/1/03]

"3.8 The permittee shall maintain and operate an in-stack CEMS (continuous emissions monitor system) for the measurement of nitrogen oxides and gas flow rate at the main stack. The CEMS is required to be operated only while the NWCF is operating. The CEMS shall meet the requirements specified in 40 CFR 60. The permittee will maintain documentation that describes quality assurance procedures and maintenance procedures."

Applicable Requirement as it Appears in the Tier I Operating Permit

Existing Permit Condition 3.8 is included in the Tier I operating permit at Section 5.2.2 and is an exact quote of the underlying applicable requirement.

Existing Permit Condition – Section 3.7, 3.10 and 3.11 [PTC No. P-020521, 12/1/03]

Existing Permit Conditions 3.7, 3.10 and 3.11 are state only permit conditions that specify operating and monitoring requirements for HEPA filters and scrubbers. These are state only permit conditions because the permit conditions are for the control of toxic substances and are not included in the Tier I operating permit.

Existing Consent Order Condition – Section 6.20.E.1 [Consent Order OCC-94-35, 4/19/99]

"E. Continued Operation of the New Waste Calciner Facility

Subject to the conditions of Section 6.20.E.2, DOE may continue to operate the Calciner at the New Waste Calcining Facility (NWCF) until June 1, 2000. Unless, and until, DEQ has issued a hazardous waste permit for its continued operation, after June 1, 2000, the Calciner shall be in standby mode. At such time as DOE decides to operate or close the Calciner, which shall be no later than June 1, 2000, DOE shall provide written notice of its decision to DEQ and EPA. Based on this decision, DOE shall either: (a) submit a closure plan to DEQ for approval for closure of the Calciner system(s) under the requirements of IDAPA 16.01.05.009 [40 CFR Part 265, Subpart G] within 90 days of the written notice, or (b) submit a schedule to DEQ for review and approval within 30 days of the written notice for submittal of a permit application for the Calciner system(s). DOE must comply with all applicable permitting requirements of IDAPA 16.01.05.008,.012 [40 CFR Parts 264 and 270] prior to operating the Calciner. In the event that a decision is made to operate the Calciner, the Calciner shall remain in standby mode until a final permit decision is made by DEQ pursuant to the procedures of IDAPA 16.01.05.013 [40 CFR 124]. Routine repair, replacement, and maintenance of the Calciner will not be deemed operation of the Calciner. Such activities may be conducted while the Calciner is in standby mode."

Applicable Requirement as it Appears in the Tier I Operating Permit

The consent order provisions are incorporated into the Tier I operating permit at Section 5.2.3. The first sentence of the underlying applicable requirement from the consent order has been changed to read: "DOE may continue to operate the Calciner at the New Waste Calcining Facility (NWCF) until June 1, 2000. Unless, and until, DEQ has issued a hazardous waste permit for its continued operation, after June 1, 2000, the Calciner shall be in standby mode". All other consent order conditions are included as exact quotes in the Tier I operating permit.

Existing Permit Condition – All of Section 4.0 [PTC No. P-020521, 12/1/03]

Existing permit conditions of Section 4.0 of this permit are for emissions units which are not located at INTEC. These permit conditions have been included in the appropriate sections of the Tier I operating permit.

14.3.5 CPP-1619/WASTE STORAGE FACILITY

The hazardous chemical/radioactive waste building (CPP-1619) is divided into two sections. One section is a hazardous waste storage area, and the other section is a low-level liquid waste unloading and transfer area. The storage area provides a centralized location for radioactive, mixed, or hazardous waste The storage portion of the building is not included in the PTC for this facility.

Low-level radioactive waste is received from TRA or other INEEL facilities at the liquid waste unloading bay. The waste is unloaded in the tanker unloading area and is transferred to CPP-604 and put through an evaporator. Trucks containing liquid low-level radioactive waste enter through one of two bay doors. The trucks are coupled with the process equipment waste evaporator storage tank feed pipe, and waste is transferred to the storage tank. The tanker is pressurized to evacuate the liquid that is transferred to the storage tanks during truck unloading. Residual liquid exposed to air during coupling and uncoupling is a potential source of radionuclide emissions. A flexible hose placed near the truck hose coupling draws potential radionuclide emissions through a HEPA filter. The HEPA filter is vented inside the bay. The bay doors are closed during unloading so airborne pollutants are emitted through the wall vent. Before entering and leaving the area, trucks are checked for radioactive contamination and leaks.

The liquid waste unloading bay is permitted in PTC No. 023-00001, March 4, 1998

Existing Permit Condition – Section 1.0 [PTC No. 023-00001, 3/4/98]

"1.0 This source shall operate within the requirements of U.S. Environmental Protection Agency (EPA) National Emission Standards for Radionuclide emissions from Department of Energy Facilities (Code of Federal Regulations 40 Part 61.90). Radionuclide emissions from stack CPP-1619-001 shall not, by themselves, cause any individual to receive a dose of greater than 0.1 millirem per year effective dose equivalent nor shall these emission in combinations with emissions from other INEEL sources, cause any individual to receive a dose of greater than 10 millirem per year effective dose equivalent."

Applicable Requirement as it Appears in the Tier I Operating Permit

Existing Permit Condition 1.0 consists of an applicable requirement and a state-only permit condition.

The applicable requirement portion of the permit term occurs as follows in the Tier I operating permit:

"2.15 Emissions of radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive, in any year, an effective dose equivalent of 10 mrem/yr."

The state only requirement of the permit term does not appear in the Tier I operating permit.

Existing Permit Condition – Section 4.2 [PTC No. 023-00001, 3/4/98]

A copy of the *National Emissions Standards for Hazardous Air Pollutants (NESHAP)* annual report shall be submitted to DEQ each year. If the NESHAP report does not demonstrate compliance with Section 1 of this permit a more detailed report shall be submitted to demonstrate compliance.

Applicable Requirement as they Appears in the Tier I Operating Permit

"2.15.2 The permittee shall submit annual reports and maintain records documenting radionuclide emissions and effective dose equivalent valves in accordance with 40 CFR 61.94 and 61.95."

The second sentence , of the original Permit Condition 4.2, is a state only permit condition and is not included in the Tier I operating permit.

14.3.6 NEW WASTE CALCINING FACILITY

The NWCF has converted aqueous radioactive mixed waste from the INTEC tank farm into a noncorrosive, dry granular substance known as calcine. Calcination concentrated the waste, thus reducing the storage volume and converting it to a more stable waste form. A heated and fluidized bed was used to evaporate the water from the feed solution and decompose the nitrate salts to produce a product composed of metallic oxides and salts. All of the mixed high-level liquid waste (waste from reprocessing spent nuclear fuel) that can be removed from the INTEC tank farm has been calcined.

In the Tier I operating permit application, INEEL indicated the calciner was shut down on June 1, 2000 under a consent order with the state of Idaho. The calciner will remain shut down until a decision is made to either upgrade the facility to MACT standards and obtain the necessary permits or to deactivate the facility. However, INEEL still has two effective permits for operation of the NWCF.

The NWCF has decontamination facilities that can be used for the treatment of spent HEPA filters, and decontamination and debris treatment of a variety of materials. The NWCF also contains the high-level liquid waste evaporator used to concentrate dilute tank farm waste prior to calcination and to reduce the volume of liquid in the tank farm.

Existing Permit Condition – Radionuclide Emissions [PTC No. 023-00001, 12/17/97]

"1. Radionuclide emissions emanating from the New Waste Calcining Facility (NWCF) subsystem HVAC system along with all other airborne radionuclides from all DOE/INEEL facilities, shall not result in an effective dose equivalent to the maximally exposed off-site member of the public where there is a residence, school, business or office which exceeds 10 millirems per year (mrem/yr) as per 40 CFR 61.92 and 94. Furthermore, radionuclide emissions emanating from the debris treatment exclusive of all other DOE/INEEL emissions shall not result in an effective dose equivalent at any business, school, or residence which equals or exceeds 0.10 millrems per year (mrem/yr).

Emission requirements, as well as all requirements to this Permit to Construct (PTC), apply to the calciner area HVAC subsystem and associated stack in the New Waste Calcining building (CPP-679) at the Idaho Chemical Processing Plant (ICPP). The stack is designated as emission source CPP-659-033."

Applicable Requirement as it Appears in the Tier I Operating Permit

"2.15 Emissions of radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive, in any year, an effective dose equivalent of 10 mrem/yr."

The condition quotes the standard given in 40 CFR 61.92. All INEEL radionuclide sources are subject to 40 CFR 61, Subpart H. In intent, this form of the requirement is identical to the underlying applicable requirement of PTC Section 2.1. The change serves to more concisely give the applicable requirement and uses a standardized format for the applicable requirement, which applies to several emissions units at INEEL.

The second sentence of the first paragraph, and the second paragraph of the existing permit condition are requirements to regulate toxic substances and are not applicable requirements as defined by IDAPA 58.01.01.008.03.b and are not included in the Tier I operating permit.

Existing Permit Condition – Sections 2.1 through 3.2 [PTC No. 023-00001, 12/17/97]

Existing Permit Conditions 2.1 through 3.2 are state only permit conditions that specify operating and monitoring requirements and are not included in the Tier I operating permit. These are state only permit conditions because the permit conditions are for the control of toxic substances.

Existing Permit Condition – Radionuclide Monitoring Requirements [PTC 023-00001, 12/17/97]

"3.3 The permittee shall monitor and test emissions of radionuclides from the NWCF calciner subsystem HVAC stack pursuant to 40 CFR 61.93(b)(2)."

Applicable Requirement as it Appears in the Tier I Operating Permit

"2.15.1 In accordance with 40 CFR 61.93, the permittee shall determine radionuclide emissions and calculate effective dose equivalent values to members of the public using EPA-approved methods."

The change serves to more concisely give the applicable requirement and uses a standardized format for the applicable requirement, which applies to several emissions units at INEEL.

Existing Permit Condition – Sections 3.4 through 4.2.3 [PTC No. 023-00001, 12/17/97]

Existing Permit Conditions 3.4 through 4.2.3 are state only permit conditions that specify operating and monitoring requirements and are not included in the Tier I operating permit. These are state only permit conditions because the permit conditions are for the control of toxic substances.

Existing Permit Condition – Radionuclide Reporting Requirements [PTC 023-00001, 12/17/97]

"4.2.4 The permittee shall submit an annual report to the DEQ indicating the highest dose equivalent as required in 40 CFR 61.94."

Applicable Requirement as it Appears in the Tier I Operating Permit

"2.15.2 The permittee shall submit annual reports and maintain records documenting radionuclide emissions and effective dose equivalent values in accordance with 40 CFR 61.94 and .95."

The change serves to more concisely give the applicable requirement and uses a standardized format for the applicable requirement, which applies to several emissions units at INEEL.

14.3.7 Fuel Storage Area, Rack Reconfiguration

The Fuel Storage Area (FSA), rack reconfiguration project involves the replacement of fuel storage racks in FSA pools #1, #5, and #6. Pool #1 will have 10-inch square ports, 20 feet tall with a total of 925 ports. Pool #5 will have 16-inch square ports, 15 feet tall with a total of 294 ports. Part of pool #6 will have 8-inch square ports, 15 feet tall with a total of 300 ports. The other three pools, #2, #3 and #4 and part of pool #6 remain the same with the arrangements shown below:

Pool #2: 10-inch square ports, 10 feet tall with a total of 486 ports.

Pool #3: 18-inch square ports, 10 feet tall with a total of 216 ports.

Pool #4: 12-inch square ports, 10 feet tall with a total of 384 ports.

Pool #6: 8-inch square ports, 10 feet tall with a total of 300 ports.

All fuel ports and rack dimensions are nominal. Tolerances from the given nominal dimensions shall be within the limits of the criticality safety analysis. When the project is complete, there will be approximately 2,905 ports in the six pools, representing 36,095 cubic feet of storage volume in which fuel may be stored within the limits of the criticality safety analysis. Emissions from the FSA pools are released through the main Fluorinel and Storage (FAST) filtration system. The filtration system consists of a single stage of prefilters and a single stage of certified HEPA filters. Each stage contains four parallel filter banks with 24 filters per bank. All of these banks are on-line except during system maintenance.

The Fuel Storage Area is regulated by Permit to Construct No. 023-00001 issued on April 5, 1996.

Existing Permit Condition – Section 1.1 & 1.2 [PTC No. 023-00001, 4/5/96]

Section 1.1 and 1.2 are the process description, emission control description, equipment listing and stack specifications which are not enforceable permit conditions and are not included in the Tier I operating permit as applicable requirement. The Tier I operating permit Summary description for the Fuel Storage Area contains the relevant information from the permit.

Existing Permit Condition – Section 2.1 [PTC No. 023-00001, 4/5/96]

"2.1 The source shall operate within the requirements of U.S. Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (40 CFR 61; Subpart A and H). Radionuclide emissions from the CPP-767 stack (FAST building) shall not by themselves, or in combination with emissions from other INEEL sources, cause any member of the public at any off-site point where there is a residence, school, business or office to receive a dose of greater than 10 millirem per year effective dose equivalent; nor shall radionuclide emissions from the FSA by themselves cause any member of the public at any off-site point where there is a residence, school, business or office to receive a dose greater than 4.2E-05 mrem per year."

Applicable Requirement as it Appears in the Tier I Operating Permit

"2.15 Emissions of radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive, in any year, an effective dose equivalent of 10 mrem/yr."

The condition quotes the standard given in 40 CFR 61.92. All INEEL radionuclide sources are subject to 40 CFR 61, Subpart H. In intent, this form of the requirement is identical to the underlying applicable requirement of PTC Section 2.1. The change serves to more concisely give the applicable requirement and uses a standardized format for the applicable requirement, which applies to several emissions units at INEEL.

The second portion of the permit term that limits the dose impact to 4.2E-05 is a requirement to regulate toxic substances and is not applicable requirements as defined by IDAPA 58.01.01.008.03.b and is not included in the Tier I operating permit.

Existing Permit Condition – Section 3.1 & 5.3 [PTC No. 023-00001, 4/5/96]

Existing Permit Conditions 3.1, 5.2 and 5.3 are the *National Emission Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities(40 CFR 61, Subpart H)* requirements and are listed in Section 2.15, 2.15.1 and 2.15.2 of the Tier I operating permit.

Existing Permit Condition – Section 3.2, 4.1, 4.2, 5.1, 5.2 & 5.4 [PTC No. 023-00001, 4/5/96]

Existing Permit Conditions 3.2, 4.1, 4.2, 5.1 and 5.4 are state only permit conditions that specify operating and monitoring requirements and are not included in the Tier I operating permit. These are state only permit conditions because the permit conditions are for the control of toxic substances.

15. WASTE REDUCTION OPERATIONS COMPLEX

15.1 Current Permits To Construct

December 1, 2003 PTC No. P-020521 contains NO_x emission limits for several boilers at the INEEL. The WROC boiler in this permit is the Cyclotherm boiler PBF-620 M-31.

15.2 Source Description

The former WROC, which includes the PBF, is located approximately six miles northeast of the CFA, and was used for field-scale pressurized- and light-water reactor testing. The WROC consisted of five separate sites, which include the PBF control area and those areas associated with the former SPERT I/PBF, SPERT II, SPERT III, and SPERT IV reactors.

The PBF control area is the central administrative area for the SPERT/PBF operations. The buildings at the control area house the old SPERT and PBF reactor controls, offices, maintenance and instrumentation areas, and the PBF reactor data center.

The SPERT I reactor was the first of the five reactors built in the WROC. The SPERT I reactor was decontaminated and decommissioned in 1964 and physically removed in 1985. In 1970, the PBF reactor was built north of the SPERT I reactor site. The PBF reactor was used for reactor tests on fuel behavior and used in a variety of operation conditions to obtain fuel rod behavior data. The SPERT I area was renamed the PBF reactor area in 1989. The PBF reactor is currently undergoing deactivation. All spent nuclear fuel (SNF) was removed from the reactor pools in 2003 and is now in dry storage at the Idaho Nuclear Technology and Engineering Center (INTEC). Decommissioning of the PBF cooling tower was completed in 2004, and final decommissioning of the PBF Reactor is currently scheduled for 2005.

The SPERT II reactor area, renamed the WEDF in 1986, was decontaminated and decommissioned in September 1980. The reactor equipment was removed during the decontamination. The SPERT II facilities were modified in 1986 for waste processing research and development. The WEDF is currently used for new research and development missions.

The SPERT III reactor area consisted of several structures and the SPERT III reactor building. The reactor was designed to conduct studies on high-power, high-temperature, heterogeneous light-water reactors. The reactor was placed in standby in 1968 and was decontaminated and decommissioned in 1980. The SPERT III area was reconfigured as the WERF. Waste treatment and storage activities at the WERF have now also ceased and have been undergoing HWMA/RCRA closure since 2002. The WERF area included:

- main building (PER-609), which housed the waste incinerator, waste stabilization facilities, and offices (incineration ceased November 2000);
- sizing building (PER-622), which housed size reduction, compaction and mixed waste macroencapsulation operations;

- auxiliary building (PER-635), which originally housed size reduction operations, and is now used for equipment storage;
- waste storage building (PER-623), which was used for storing mixed waste and hazardous waste; and
- ROC operations support building (PER-641), which contains offices for new research and development missions.

The SPERT IV reactor, renamed the MWSF (PER-613), was decontaminated and decommissioned, then reconfigured to the present operations in 1986. The facility was subsequently modified to store mixed waste and hazardous waste.

All hazardous waste treatment and storage operations at WERF/WROC have ceased and the HWMA/RCRA Storage Permit for WERF/WROC (Volume 11) was terminated on June 15, 2004.

15.3 REGULATORY ANALYSIS

15.3.1 INEEL-WIDE NO_X SOURCES

Emissions of NO_x from several sources at the INEEL facility are regulated in PTC No. P-020521. Included in this PTC is one boiler at WROC. No control equipment is associated with this boiler.

Existing Permit Condition - NO_x Emissions Limits [PTC No.P-020521, 12/1/03]

"4.4 Emission Limits

NO_x emissions from all INEEL-wide NO_x sources shall not exceed their corresponding pound-per-hour (lb/hr) or tons-per-year (T/yr) emission limits listed in Table 4.1."

Table 4.1 INEEL-WIDE NO_X SOURCES EMISSIONS LIMITS

Source Description	NO_x	
	lb/hr	T/yr
ANL Boiler No. 1 (Keeler boiler)	3.36	14.72
ANL Boiler No. 2 (Keeler boiler)	3.36	14.72
ANL Boiler No. 3 (Keeler boiler)	3.36	14.72
ANL Boiler No. 4 (Cleaver Brooks boiler)	3.74	14.72
CFA-650 B-25 (Cleaver Brooks boiler)	0.58	1.90
CFA-662 B-28 and B-35 (one stack)	0.96	3.14
CFA-671 B-33 and B-34 (one stack)	1.52	4.98
CFA-688 B-101 and B-102 (one stack)	2.32	7.21
NRF Boiler No. 1 (Vogt boiler)	22.66	37.13
NRF Boiler No. 2 (Vogt boiler)	22.66	37.13
NRF Boiler No. 3 (Vogt boiler)	22.66	37.13
PBF-620 M-31 (Cyclotherm boiler)	0.24	0.79"

Applicable Requirement as it Appears in the Tier I Operating Permit

Only the portion of Table 4.1 that included equipment located in WROC was presented.

These limits are stated in Permit Condition 6.1 of the Tier I operating permit. For clarification, the hourly NO_x emissions limits are based on a monthly average, and the annual NO_x emissions limits are based on any consecutive 12-month period.

"6.1 Oxides of nitrogen emissions from the Cyclotherm boiler PBF-620 M-31 shall not exceed any corresponding emission rate limit listed in Table 6.2.

Table 6.2 OXIDES OF NITROGEN EMISSIONS FROM THE BOILER

Source Description	NO_x (lb/hr)[1]	NO_x (T/yr)[2]
Cyclotherm boiler PBF-620 M-31	0.24	0.79

[1] Pounds per hour based on a monthly average
[2] Tons per year based on any consecutive 12-month period."

Compliance Assurance

The NO_x emission rate limits in the PTC did not have appropriate operating or monitoring requirements. Therefore, the following permit conditions were added to the Tier I Operating Permit to assure compliance.

"6.2 The permittee shall not burn ASTM grade No. 5 and 6 in the Cyclotherm boiler PER-620-023."

"6.3 The permittee shall monitor and record the monthly and consecutive 12-month period fuel consumption and type of fuel combusted by the Cyclotherm boiler PER-620-023. A compilation of the most recent five years of records shall be kept onsite and shall be made available to DEQ representatives upon request."

"6.4 The permittee shall calculate and record the average pounds per hour per month NO_x emissions and NO_x emissions per consecutive 12-month period from Cyclotherm boiler PER-620-023 using appropriate EPA AP-42 or manufacturer supplied emissions factors, or a DEQ approved alternative method. A compilation of the most recent five years of records shall be maintained onsite and shall be made available to DEQ representatives upon request."

Compliance with the hourly and annual NO_x emissions limits is assured through monitoring the fuel usage through each boiler, and calculating subsequent NO_x emissions using appropriate EPA AP-42 emissions factors for burning ASTM grade numbers 1, 2, and 4 fuel oils. Compliance or noncompliance with the hourly NO_x emissions limit is demonstrated by using the following equation:

(X_a lb/1,000 gal)(Y gal/month)(1 month/Z hr) = X lb/hr on a monthly basis

Where X_a = NO_x emissions factors for fuel burned;
Y = monthly fuel usage; and
Z = total hrs of individual boiler operation during the month.

The NAAQS averaging period for NO_x is annual. Therefore, it is appropriate to assure compliance with the hourly NO_x emissions limit on a monthly basis.

Compliance or noncompliance with the annual NO_x emissions limit is assured using the following equation:

(X_a lb/1,000 gal)(Y gal/yr)(1 T/2,000 lbs) = X T/yr

Where X_a = NO_x emissions factor for fuel burned; and
Y = annual fuel usage.

The ton per year emissions rate is an annual limit based on consecutive 12-month periods. The results of the calculations over the appropriate time period will be used to assure compliance.

16. NAVAL REACTORS FACILITY

16.1 Current Permits To Construct

December 1, 2003 PTC No. P-020521 contains NO_x emission limits for several boilers at the INEEL. NRF boilers in this permit include: NRF 620-014, NRF 620-013, and NRF 620-014.

16.2 Source Description

The fenced portion of the Naval Reactors Facility (NRF) covers 84 acres of 4,400 acres under the cognizance of NRF in the west-central part of the INEEL. Established in 1949, NRF is operated for the U. S. Naval Nuclear Propulsion Program by Bechtel Bettis, Inc., Bettis Atomic Power Laboratory-Idaho. The principal facilities at NRF are three former naval reactor prototypes (S1W, A1W, and S5G) and the Expended Core Facility (ECF). The S1W, A1W, and S5G prototypes were shut down in October 1989, January 1994, and May 1995, respectively.

Developmental nuclear fuel material samples, naval spent fuel, and irradiated reactor plant components/materials are examined at ECF. The knowledge gained from these examinations is used to improve current designs and to monitor the performance of existing reactors. The naval spent fuel examined at ECF is critical to the design of longer-lived cores, which results in the creation of less spent fuel requiring disposition. NRF is also preparing naval fuel for dry storage and eventual transportation to a repository.

16.3 Regulatory Analysis

16.3.1 INEEL-WIDE NO_X SOURCES

Emissions of NO_x from several sources at the INEEL facility are regulated in PTC No. P-020521. Included in this PTC are three boilers at NRF. No control equipment is associated with these boilers.

Existing Permit Condition – NO_x Emissions Limit [PTC No. P-020521, 12/01/03]

"4.4 Emission Limits

NO_x emissions from all INEEL-wide NO_x sources shall not exceed their corresponding pound-per-hour (lb/hr) or tons-per-year (T/yr) emissions limits listed in Table 4.1."

Only a portion of Table 4.1applies to boilers located at the NRF.

Applicable Requirement as it Appears in the Tier I Operating Permit

These limits are stated in Permit Condition 7.1 of the Tier I Operating Permit. For clarification, the hourly NO_x emissions limits are based on a monthly average, and the annual NO_x emissions limits are based on any consecutive 12-month period.

"7.1 Oxides of nitrogen emissions shall not exceed their corresponding average pounds per hour per month or tons per consecutive 12-month period emissions limits listed in Table 7.2.

Table 7.2 OXIDES OF NITROGEN EMISSIONS FROM THE BOILERS

Source Description	NO_x (lb/hr)[1]	NO_x (T/yr)[2]
NRF Boiler No. 1	22.66	37.13
NRF Boiler No. 2	22.66	37.13
NRF Boiler No. 3	22.66	37.13

[1] Pounds per hour based on a monthly average

[2] Tons per year based on any consecutive 12-month period."

The original permit term was changed to clarify that the hourly NO_x emissions limits are based on hourly averages calculated on a monthly basis, and the annual NO_x emissions limits are based on any consecutive 12-month periods. In addition, NRF changed the way the boilers are numbered in the application, and these changes are reflected in the Tier I Operating Permit.

Compliance Assurance

The NO_x emission rate limits in the PTC did not have appropriate operating or monitoring requirements. Therefore, the following permit conditions were added to the Tier I Operating Permit to assure compliance:

"7.2 The permittee shall not burn ASTM grade No. 5 and 6 in NRF Boiler No. 1, NRF Boiler No. 2, and NFR Boiler No. 3."

"7.3 The permittee shall monitor and record the monthly and consecutive 12-month period fuel consumption and type of fuel combusted by NRF Boiler No. 1, NRF Boiler No. 2, and NRF Boiler No. 3. A compilation of the most recent five years of records shall be maintained onsite and shall be made available to DEQ representatives upon request."

"7.4 The permittee shall calculate and record the average pounds per hour per month NO_x emissions and NO_x emissions per consecutive 12-month period from NRF Boiler No. 1, NRF Boiler No. 2, and NRF Boiler No. 3 using appropriate EPA AP-42 or manufacturer supplied emissions factors, or a DEQ approved alternative method. A compilation of the most recent five years of records shall be maintained onsite and shall be made available to DEQ representatives upon request."

Compliance with the hourly and annual NO_x emissions limits is assured through monitoring the fuel usage through each boiler, and calculating subsequent NO_x emissions using appropriate EPA AP-42 emissions factors for burning ASTM grade numbers 1, 2, and 4 fuel oils. Compliance or noncompliance with the hourly NO_x emissions limit is demonstrated by using the following equation:

$(X_a$ lb/1,000 gal)(Y gal/month)(1 month/Z hr) = X lb/hr on a monthly basis

Where X_a = NO_x emissions factors for fuel burned;
Y = monthly fuel usage; and
Z = total hrs of individual boiler operation during the month.

The NAAQS averaging period for NO_x is annual. Therefore, it is appropriate to assure compliance with the hourly NO_x emissions limit on a monthly basis.

Compliance or noncompliance with the annual NO_x emissions limit is assured using the following equation:

$(X_a$ lb/1,000 gal)(Y gal/yr)(1 T/2,000 lbs) = X T/yr

Where X_a = NO_x emissions factor for fuel burned; and
Y = annual fuel usage.